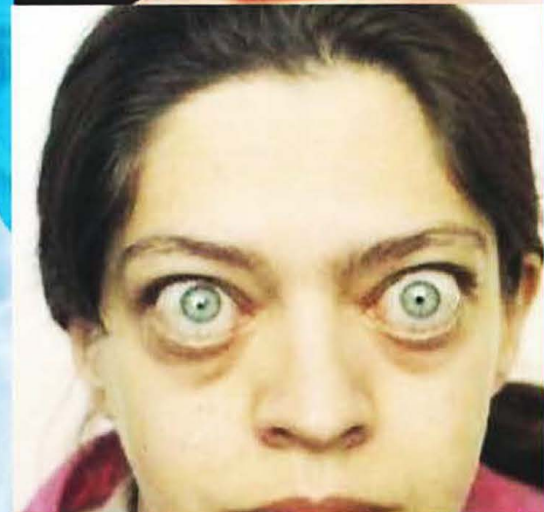


Surgical Jars

Dr.Mohammed El-Matary



VISIT...

LANZAROTE
Caliente.COM

Allah the all merciful I beg thee
to accept this effort
For the soul of my mother
She was your gift for me

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Dedication

*Allah the all merciful, I beg Thee
To accept this effort
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Preface

This book provides an update for medical students who need to keep abreast of recent developments. I hope also it will be useful for those preparing for postgraduate examination.

This book is designed to provide a concise summary of knowledge about surgical pathology, which medical students and others can use as study guide by itself.

This book is written primarily for those who have some knowledge of pathology specially surgical pathology.

The author is extremely grateful to all the contributors for the high standard of the new chapters, and hopes that you, the reader, will enjoy going through these pages as much as he had.

M. El-Matary

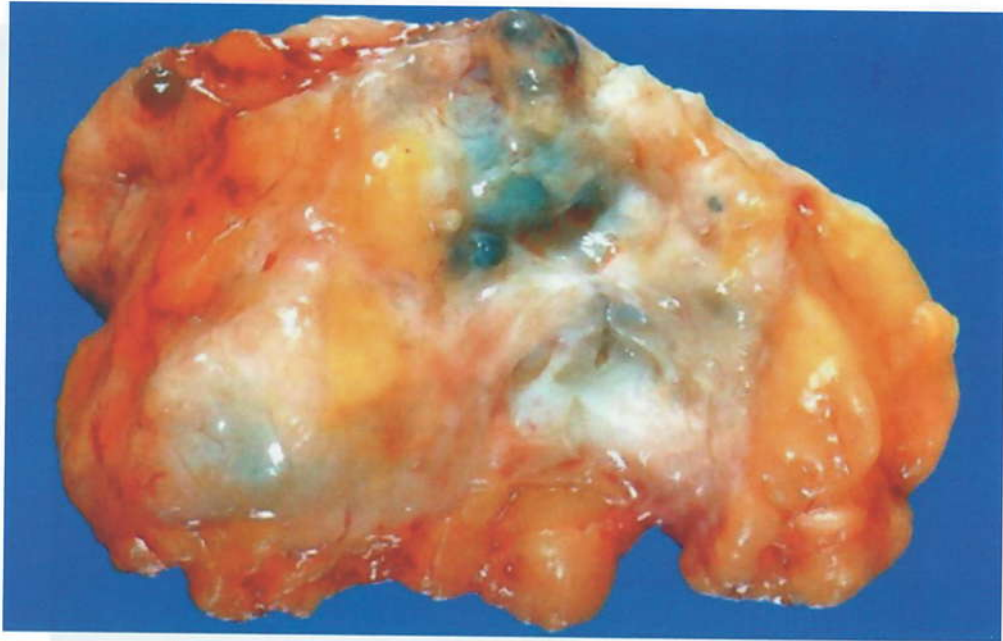
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Breast Jars

Fibrocystic Breast



Fibrocystic Breast

- Exact cause is not known (Hormonal changes)
- It is thought to represent an aberration of the normal changes that take place in a healthy breast (ANDI)
- Commonest(breast disorder/ site: upper outer quadrant)



- Breast mass excised because of suspicion of malignancy
- Grossly the cut section shows areas of fibrosis and multiple cysts
- Fibrosis that surrounds a tense cyst gives a clinical feeling of a hard mass
- Microscopically there are also adenosis (non-neoplastic glandular hyperplasia) and epitheliosis (epithelial hyperplasia within the small ducts)

Questions (True or false)

1. This breast specimen shows necrotic breast mass ()
2. The underlying cause is aberration of the normal changes that occurs in healthy breast tissue ()
3. There are cystic spaces all over specimen ()
4. This pathology is malignant in nature ()
5. This disease affect mainly middle aged multi-paras females ()
6. Usually predisposed by repeated breast trauma ()
7. In some pathological types it may be precancerous especially in old females ()
8. The main symptom is cystic breast lump , cyclic mastodynia ()
9. On palpation multiple breast lumps are present ()
10. Fibrosis that surrounds tense cyst gives feeling of hard mass ()
11. Adenosis and epitheliosis are a common histological association ()
12. Axillary lymph node usually are enlarged, tender ,hard and fixed ()
13. Hemorrhage and infection are possible complications ()
14. Mammary ductectasia maybe differential diagnosis ()
15. When breast lump is felt, cytological examination is required ()
16. FNAC is a helpful investigations ()
17. Mammography can accurately diagnose this condition ()
18. Treatment is mainly surgical resection of these cysts ()

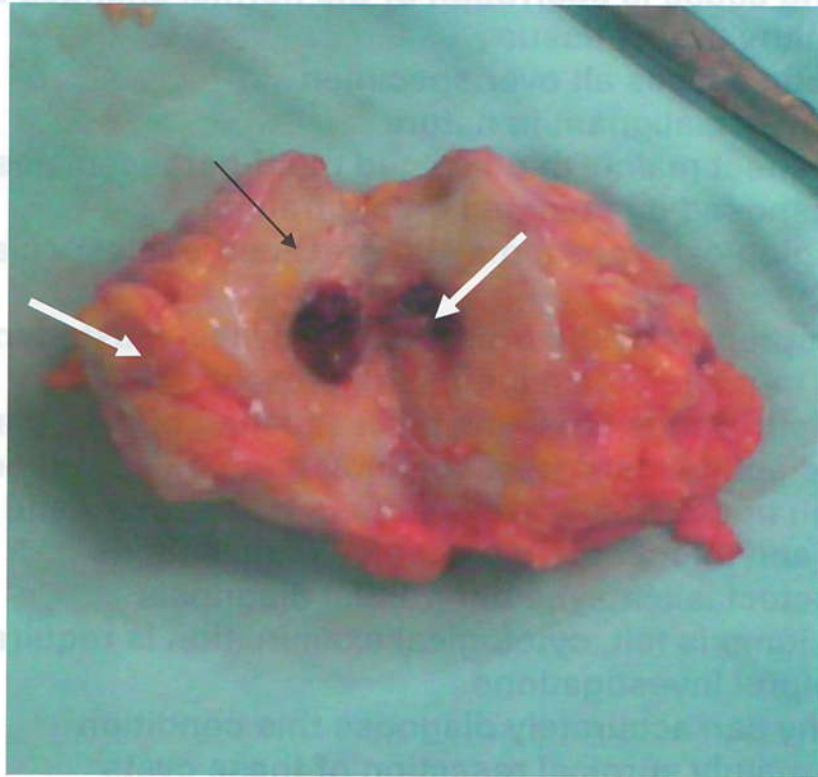
Chronic Breast Abscess

- Surgical specimen from the breast.
- Notice the yellow fat lobules, the very thick fibrous wall and the central cavity.
- DD includes:
 - ✓ Cancer with central breakdown
 - ✓ Chronic breast abscess
 - ✓ Plasma cell mastitis (duct ectasia)

Questions (True or false)

19. This pathology is traumatic in nature ()
20. Pain, fever are important two symptoms ()
21. If not treated it predispose to cancer breast ()
22. Prophylactic measures have no role in prevention ()
23. Once pus formed immediate antibiotic course should be started ()

Chronic Breast Abscess



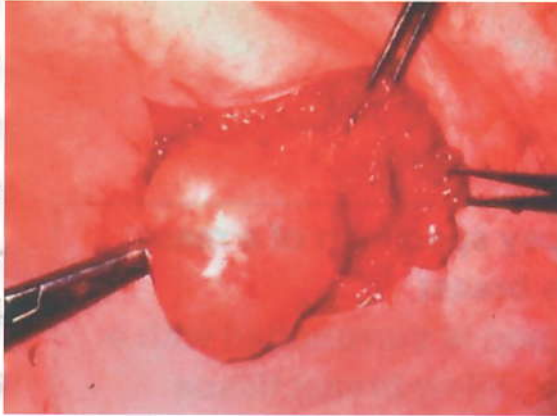
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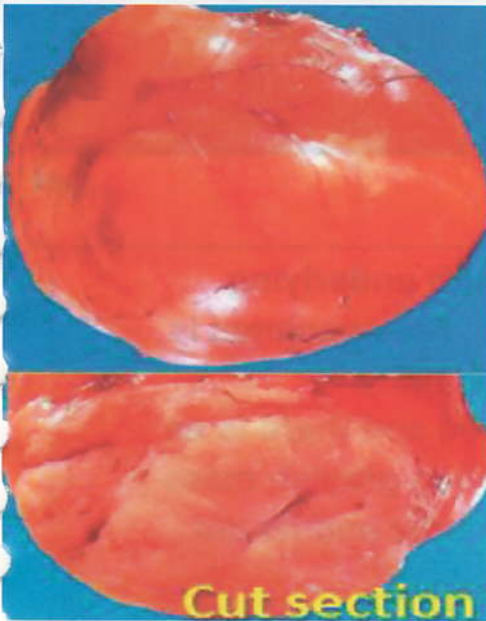
Questions (True or false)

19. This pathology is traumatic in nature ()
20. Pain, fever are important two symptoms ()
21. If not treated it predispose to cancer breast ()
22. Prophylactic measures have no role in prevention ()
23. Once pus formed immediate antibiotic course should be started ()

Fibroadenoma



- Benign neoplasm of both fibrous and glandular elements of the breast
- Note how it is easily enucleated at surgery because it is well-encapsulated, i.e., it does not invade the surrounding tissues (clinically freely mobile)



- This specimen demonstrates the intact capsule
- The surface may be smooth or lobulated, as in this case
- The cut section bulges forwards, in contrast to that of a cancer mass

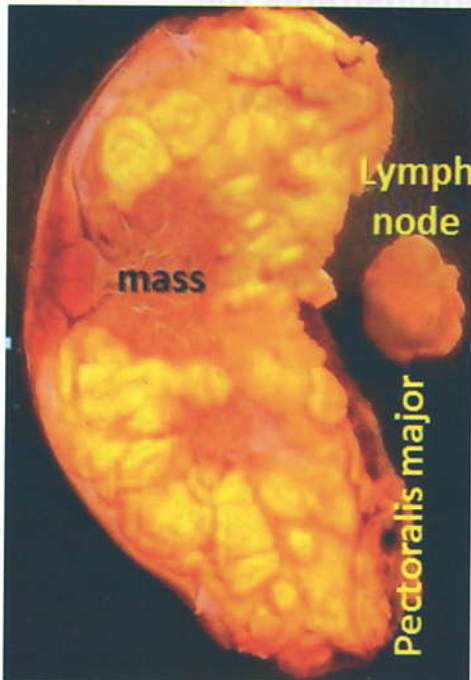
Questions (True or false)

24. This breast show well defined homogenous mass ()
25. There is area of hemorrhage and necrosis ()
26. The whitish color indicate excessive adenosis ()
27. This is 2nd most common cause for breast mass in young females ()
28. This pathology is malignant in nature ()
29. The consistency of this mass may be hard or soft ()
30. Pain is the cardinal symptom ()
31. Clinically a lump felt with restricted mobility and irregular surface ()
32. Axillary lymph nodes usually enlarged but not tender or fixed ()
33. FNAC is a helpful investigations ()
34. Mammography can accurately diagnose this condition ()
35. US is an important investigation ()
36. Ttt is essentially surgical ()
37. Pre and post-operative radiotherapy is a must ()
38. Simple mastectomy may be done if the mass is huge ()

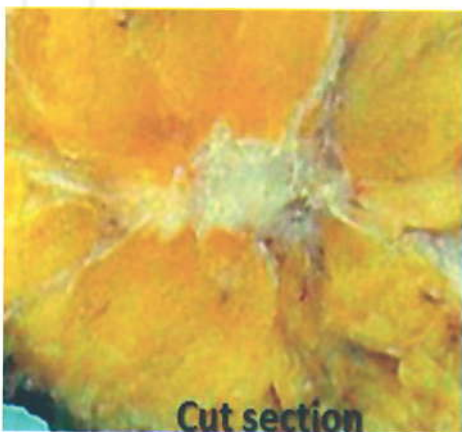
Breast Cancer



- Excision biopsy specimen of a mass from a female breast
- Mass is grey and is surrounded with a rim of healthy yellow breast tissue
- No capsule. Poorly-defined edge
- Gave a gritty sensation when cut
- Cut surface retracts



- Female breast with underlying pectoral muscle. The specimen is bisected longitudinally
- Nipple is retracted and there is an irregular underlying grayish mass
- Mass has no capsule and its cut surface retracts back
- An enlarged axillary lymph node is seen
- This is a classic radical mastectomy specimen



- Notice the gross infiltration of the surrounding breast tissue.
- Some cancers grossly give a false impression of a capsule. This is particularly true of renal cell carcinoma and some thyroid cancers. Invasion is confirmed microscopically



- Mastectomy specimen that contains a cancer mass
- Breast cancer may arise from the lobules or the ducts
- The tumour arises from duct epithelium in the majority of cases
- It may remain within the epithelium (in situ) or, more frequently, it invades (infiltrates) the basement membrane
- Invasive duct carcinoma is the commonest histological type



- Mastectomy specimen
- Locally advanced cancer because of extensive skin infiltration



- Paget's disease of the nipple is a variant of duct carcinoma(1%) but the tumour begins in epithelium of main milk duct, spread up to skin of nipple and down to breast tissues.
- It presents with nipple erosions, eczema-like.
- Considered breast cancer stage 1 but radioresistent.

Questions (True or false)

- 39. This slide show heterogeneous necrotic breast mass ()
- 40. There is skin dimpling ()
- 41. Skin overlying show peau du range ()
- 42. There is nipple retraction ()
- 43. Nipple and areola are eroded ()
- 44. This pathology is malignant in nature ()
- 45. Usually affect old females ()
- 46. Less common in nulliparous in comparison to multiparas ()
- 47. Fibroadinosis of the breast may be a predisposing factor ()
- 48. Obesity increase the risk ()
- 49. this pathology usually affect upper inner quadrant ()
- 50. medullary type is the commonest pathological type ()
- 51. mainly spread via lymphatics ()
- 52. bone secondaries are osteoplastic ()
- 53. bone secondaries commonly affected thoracic vertebrae ()
- 54. pain is the usual cardinal symptom ()
- 55. jaundice may be a possible complication ()
- 56. presence of skin dimpling diagnose cancer breast ()
- 57. on examination the mass usually hard and irregular ()
- 58. US and FNAB are important diagnostic tools ()
- 59. Axillary LN enlargement is an important prognostic criteria ()
- 60. Ttt is essentially by radiotherapy regardless to the stage ()
- 61. Operable cases may treated conservative ()
- 62. Radiotherapy is important adjuvant therapy in operable cases ()
- 63. Bilateral large lumps best treated conservative ()

Breast Key answer

1	FALSE
2	True
3	True
4	FALSE
5	FALSE
6	FALSE
7	True
8	True
9	True
10	True
11	True
12	FALSE
13	True
14	True
15	FALSE
16	True
17	FALSE
18	FALSE
19	FALSE
20	True
21	FALSE
22	FALSE
23	FALSE
24	True
25	FALSE
26	FALSE
27	FALSE
28	FALSE
29	True
30	FALSE

31	FALSE
32	FALSE
33	FALSE
34	True
35	True
36	True
37	FALSE
38	True
39	True
40	Accord
41	Accord
42	Accord
43	Accord
44	True
45	True
46	FALSE
47	True
48	True
49	FALSE
50	FALSE
51	True
52	FALSE
53	FALSE
54	FALSE
55	True
56	FALSE
57	True
58	True
59	True
60	FALSE

61	True
62	True
63	FALSE

Important points & tweets based on our questions

- Q2:** ANDI → Abrasion in the normal development & involution of the breast, the most frequent breast disorder, (occur after puberty & before menopause):
- Q3:** Affect commonly the outer upper quadrant of breast .. may have small or large cysts, or may coalesce to form (Blue Domed cyst of Bloodgood) a large cyst containing altered blood.
- Q4:** Fibroadenosis is not precancerous, but hyperplasia & papillomatosis ↑ the risk of malignancy 1.5-2 times but atypical hyperplasia ↑ risk 5 times.
- Q5:** The disease risk ↑ by estrogen, ↓ by progesterone so risk ↓ with pregnancy.
- Q8:** Most frequent complaint is a breast Lump, related to menstrual cycle, may disappear when patient is reexamined 1 week after the cycle. also may present by pain that ↑ premenstrually & by breast movement.
- Q9:** Breast lump that is best felt by tip of finger not felt of the hand (painful nodularity).
- Q14:** Must be differentiated from other causes Of breast discharge(Duct ectasia is the commonest cause) .
- Q17:** Investigations usually not needed but may be done to exclude cancer in suspected cases ... US& mammography to differentiate between cyst & solid lesion .. if cyst we can aspirate the content, if solid take FNABC.
- Q18:** Reassurance of patient from cancer phobia is the most important & then conservative medical ttt & life style modifications.
- Q19:** chronic breast abscess occur due to (bad general conditions of the patient, ppt factor as lactation, or inadequate ttt of acute abscess).
- Q22:** PROPHYLACTIC TTT by adequate drainage of acute abscess, Curative ttt by Excision of whole abscess not simple incision due to fibrosis.
- Q27:** Is the commonest cause of breast mass in young females, fibroadenoma is a benign neoplasm of breast affects both fibrous & glandular element of breast but fibrous element predominates.

Q29: Fibroadenoma is a painless lump discovered accidentally .

Q30: small non tender firm well circumscribed with smooth surface .
HIGHLY mobile (breast mouse) with NO LNS enlarged.

Q33: Clinical picture is enough for diagnosis . mammography reveals well circumscribed lesion , us may be needed .

Q37: Excision by enucleation & histological confirmation of diagnosis .

Q40: nipple retraction in cancer breast due to infiltration of milk duct (NOT diagnostic)

skin dimpling is the earliest skin sign , due to contracture of cooper's ligament ((NOT diagnostic)) , but skin nodules is the sure sign of malignancy , occur due to retrograde lymphatic permeation (diagnostic).

Q 46: One of major risk for cancer breast is delayed age of 1st pregnancy , so nulliparous are at higher risk.

Q 47: Duct papilloma ↑ the risk 1.5-2 times , Atypical epithelial hyperplasia
↑ risk 2-5 times , lobular carcinoma insitu ↑ risk 5-10 times .

Q50: Schirrous carcinoma is the commonest pathological type (75%) // (upper outer quadrant 60% of cases because of increased breast mass & estrogen receptors.

Q52: Bone secondaries are mainly OSTEOLYTIC , affects commonly the LUMBAR vertebrae , femur & ribs (metastases to vertebrae are due to valveless communication between posterior intercostal veins & paravertebral venous plexus .

Q58: U/S can differentiate solid from cystic lesion ..& U/S guided biopsy can be done, for cystic lesion →do aspiration , for solid lesion → do FNABC(simple, very accurate & inexpensive).

mammography 95% accuracy , used for screening but not accurate in young women

MRI gold standard for women with synthetic prosthesis.

Q59 : Large fixed LNS are of bad prognosis , number of affected LNS inversely proportional to survival .

-2-

Thyroid Jars

Questions (True or False)

1. This is a subotal thyroidectomy specimen
2. The surface of the gland is multinodular
3. The condition can be associated with exophthalmos
4. Estimation of serum TSH is mandatory
5. This condition can be treated medically
6. Histologically the gland shows dense lymphocytic infiltration
7. The underlying etiology could be autoimmune

Smooth thyroid enlargement



Smooth thyroid enlargement

- An mildly enlarged thyroid gland with a smooth surface is excised either because of thyrotoxicosis (Graves' disease) or because it contains a malignant tumour

Questions (True or false)

1. This is a subtotal thyroidectomy specimen ()
2. The surface of the gland is multinodular ()
3. The condition can be associated with exophthalmos ()
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Multinodular Goiter

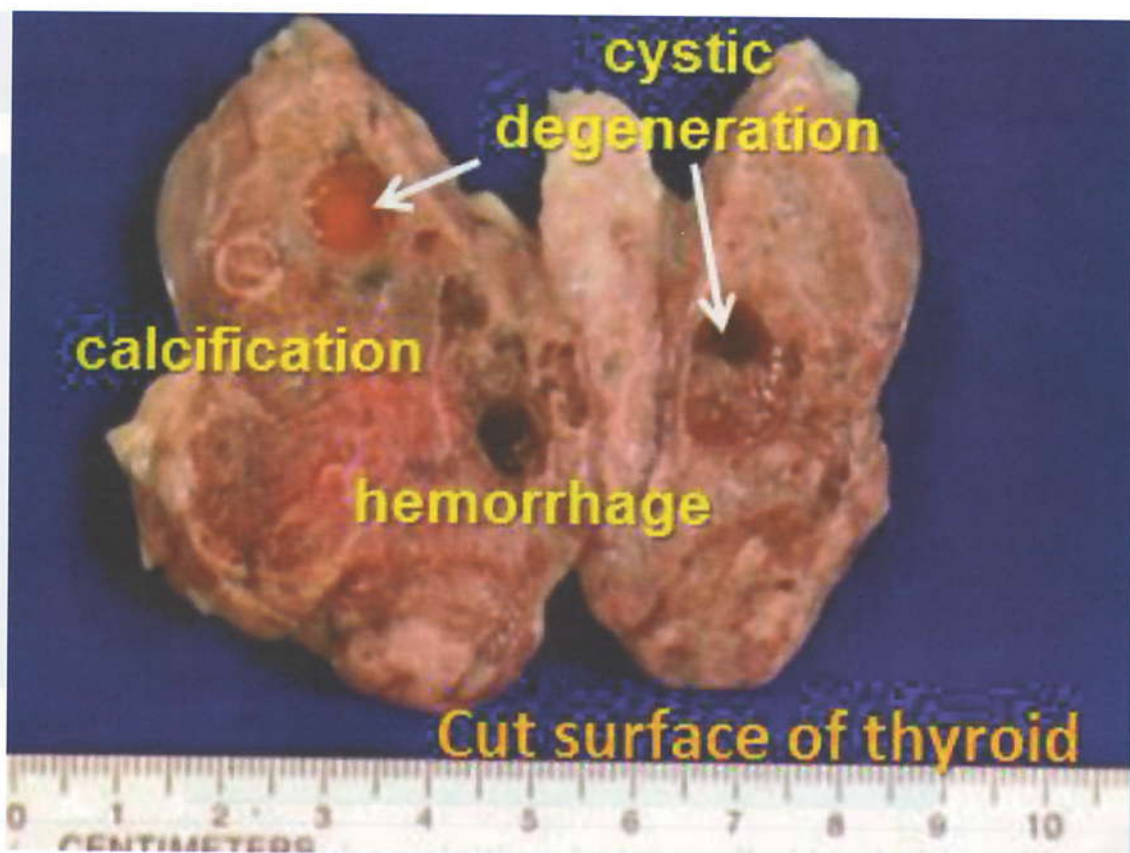


Multinodular Goiter

- The thyroid gland is the seat of multiple nodules
- Grossly one cannot differentiate between a simple multinodular goiter and a toxic multinodular one.
- Both are treated by thyroidectomy



- A dominant nodule in a multinodular goiter deserves investigations for the possibility of malignancy



- The nodules of a multinodular goiter may develop cystic degeneration, hemorrhage and calcification
- A simple multinodular goiter may develop toxicity.
- Malignant transformation is rare
- The commonest complication of a multinodular goiter is tracheal compression

Questions (True or false)

8. A picture of congenital thyroid swelling ()
9. There are multiple unequal nodules ()
10. It is the most common thyroid pathology ()
11. Usually affect females above 50 years ()
12. Painful neck swelling is the main complain ()
13. Tracheal compression is the commonest complication ()
14. Clinically carotid pulse not felt ()
15. In most cases heart rate exceed 100 bpm ()
16. Suddenly developed pain is an emergency and denoting hge ()
17. FNAB is the most important investigation ()
18. Treatment is mainly medical by carbimazole ()
19. When surgery indicated total thyroidectomy done ()

Solitary Thyroid Nodule



- Solitary thyroid nodule both clinically and by ultrasound.
- A solitary nodule should be taken seriously because of the possibility of malignancy
- FNA showed follicular cells (follicular adenoma versus carcinoma)
- Hemithyroidectomy was done
- Though grossly it appears well-encapsulated, yet histologically it turned out to be a follicular carcinoma



- Solitary thyroid nodule both clinically and by ultrasound
- FNA showed papillary cells. Practically, there is no papillary adenoma
- The presence of papillary cells indicates papillary thyroid cancer
- Total thyroidectomy was done.
- The cut surface shows another nodule, which is small (yellow arrow)
- Papillary thyroid cancer is commonly multicentric
- Papillary thyroid cancer is the commonest form of primary thyroid malignancies (60%).
- It is TSH-dependent

Questions (True or false)

20. A picture of solitary cystic thyroid nodule ()
 21. It is a malignant nodule with areas of hge and necrosis ()
 22. Swelling in the neck is the main complaint ()
 23. It may be toxic ,simple and malignant ()
 24. Thyroid scan cannot exclude toxic pathology ()
 25. The surest diagnostic tool is lobectomy and histopathology()
 26. Treatment is mainly surgical ()

ThyroidKey answer

1	True
2	FALSE
3	True
4	True
5	True
6	True
7	True
8	FALSE
9	True
10	True
11	FALSE
12	FALSE
13	True
14	FALSE
15	True
16	True
17	True
18	FALSE
19	True!
20	Accord
21	Accord
22	True

23	True
24	FALSE
25	True
26	Accord

Important points & tweets based on our questions

- Q3:** True exophthalmus , actual protrusion of eye ball by exophthalmus producing factor , due to deposition of fluid & round cell infiltrate in retrobulbar tissues .
- Q4:** TSH is most sensitive for mild cases (suppressed), free T3 T4 (elevated) also thyroid Abs needed.
- Q5:** Medical TTT (carbimazole & propranolol) to restore patient to euthyroid status , then to prescribe a maintenance dose for prolonged period in the hope that permanent remission occurs.
- Q6:** There is marked increase in vascularity & extensive lymphocytic infiltration .
- Q12:** Complaint is usually cosmetic deformity or some respiratory obstruction.
- Q13:-** Tracheal obstruction either by compression on either sides & becomes anteroposterior slit (scabbard trachea) , or anteroposterior compression , or displaced to one side or in long standing cases chondromalacia.
-2ry toxicosis may complicate 30% of cases.
-follicular carcinoma may develop in 35 of cases.
- Q18:** Most authorities agree upon irreversibility of multinodular goiter , so surgery is indicated especially if evidence of tracheal compression & for cosmetic reasons, but not advised below 25 years as it may be followed by recurrence, (don't forget: Total thyroidectomy & thyroxin for life is better than reexploration of the neck).
- Q24:** Thyroid isotopic scan can reveal multinodular goiter, also if nodule is (hot→ it is toxic & malignancy is excluded)(warm→it is functioning adenoma & possibility of malignancy is 3.5%)(cold→ malignancy 10-16%).
- Q26:** For toxic nodule if pt < 45 yrs→ ipsilateral lobectomy after preparation is ttt , total thyroidectomy done for malignant goiter, lobectomy+ isthmusectomy + paraffin done for suspicious follicular neoplasm.

-3-

Vascular Jars

Questions (True or false)

1. This aortic segment shows plaque spots with ulceration
2. Thrombosis is a common consequence
3. This is a common cause for acute limb ischaemia
4. Hypertension and diabetes are rare association
5. This patient may presented by chronic upper limb ischaemia
6. This process starts after the age of 50 years
7. Cholesterol levels elevated especially LDL
8. Limb pain is the main symptom
9. This particular patient may has sexual troubles
10. General examination may reveals loss of hair in both lower limb
11. Moist gangrene is a possible complication
12. Angiography is the initial investigation of choice
13. Doppler can assess the severity of this ischaemia
14. Sympathectomy is excellent method to increase skin vascularity
15. Treatment of this particular patient is endovascular surgery

Atherosclerosis



- The aorta and iliac arteries are slit longitudinally to expose the intima, which is affected with multiple white patches and ulcerations
- This is aorto-iliac atherosclerosis
- This is not a loop of intestine because it has branches; two terminal branches (bifurcation) and multiple branches along its course
- This is a postmortem specimen as the treatment is never by excision of the affected aorta
- Complications include
 - ✚ Chronic ischemia because of progressive narrowing of lumen
 - ✚ Acute ischemia is caused by either
 - acute thrombosis or
 - distal migration of atheromatous plaques and thrombi causing distal embolism
 - ✚ Aneurysm as the disease weakens the arterial media. This is helped by hypertension

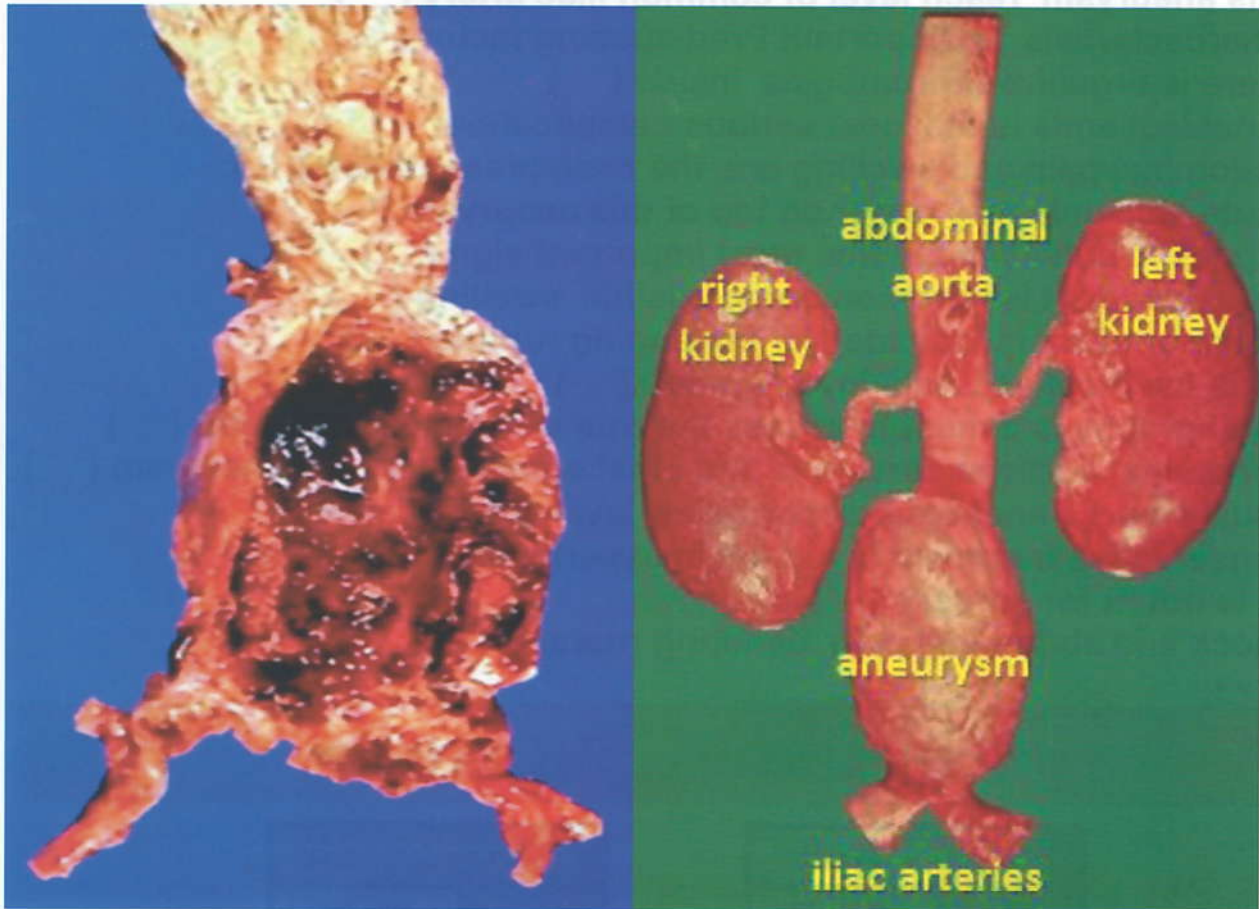


Atherosclerosis

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10. General examination may reveals loss of hair in both lower limbs ()
11. Moist gangrene is a possible complication ()
12. Angiography is the initial investigation of choice()
13. Doppler can assess the severity of this ischemia ()
14. Sympathectomy is excellent method to increase skin vascularity ()
15. Treatment of this particular patient is endovascular surgery()

Aneurysms



Aortic Aneurysm

- Postmortem specimen that shows abdominal aorta and iliac arteries
- There is an aneurysm of lower part of aorta that shows thrombi on its wall
- Commonest cause is atherosclerosis. Hypertension is a strong predisposing cause
- Commonest site is the infra-renal part of abdominal aorta (below the origin of the renal arteries)
- Complications
 - ✚ The most fearful complication is rupture that leads to severe hemorrhage.
 - ✚ A ruptured aortic aneurysm is highly fatal.
 - ✚ A ruptured cerebral aneurysm causes subarachnoid hemorrhage
 - ✚ Another complication is distal embolism that is caused by a detached part of a mural thrombus

Questions (True or false)

16. A picture of true saccular aortic aneurysm ()
17. This aneurysm reach level of common iliac artery ()
18. Atherosclerosis is important Predisposing factor ()
19. There is organized thrombosis inside ()
20. Distal ischemia is the most serious complication()
21. Abdominal pain and swelling are the main presentation ()
22. Acute ischemia may occur on top of this aneurysm ()
23. Expansile pulsations is the most important sign ()
24. On palpation it is hard non compressible swelling ()
25. Diameter >2cm is indicator for impending rupture ()
26. US is the most accurate investigation ()
27. Angiography is a must to assess the true aneurysmal diameter ()
28. Abdominal aortic aneurysm is 2nd most common site for aneurysm ()
29. Usually aortic aneurysm occur below level of renal artery ()
30. Conservative treatment is a must in hypertensive patient as he is not fit for surgery ()
31. Shock and abdominal pain denoting rupture()

VascularKey answer

1	True
2	True
3	FALSE
4	FALSE
5	FALSE
6	FALSE
7	True
8	True
9	True
10	True
11	FALSE
12	FALSE
13	True
14	FALSE
15	FALSE
16	Accord

17	Accord
18	True
19	Accord
20	FALSE
21	FALSE
22	True
23	True
24	FALSE
25	FALSE
26	True
27	FALSE
28	FALSE
29	True
30	FALSE
31	True

Important points & tweets based on our questions

- Q3:** Atherosclerosis is the main cause of chronic limb ischemia above age of 45 years , and may occur in younger diabetic patient .
- Q8:** Symptoms start by intermittent claudication (cramp-like pain) induced by exercise relieved by rest affect group of muscles according to level of obstruction.
- Q9:** Impotence may occur in aortic bifurcation block due to diminished blood flow in internal iliac arteries , Leriche syndrome , triad of (claudication in 1 or both limbs, absent femoral pulse & impotence) .
- Q12:** arteriography only performed if ischemia is severe enough to raise the need for revascularization .
- Q18:** Atherosclerosis weakens the arterial wall .. commonest cause for aneurismal formation , at various sites, responsible for 95% of Abdominal Aortic Aneurysms.
- Q20:** Rupture is the most serious complication, producing fatal haemorrhage, suspected if diameter > 5cm , & with ↑ elastase in blood.
- Q22:** 75% of abdominal aneurysms are Asymptomatic, discovered accidentally during routine examination as pulsatile epigastric mass or by us or CT.
..pain is the commonest symptom
... may present by triad of rupture : * pulsatile epigastric mass * acute upper abdominal pain * shock.
- Q26:** Duplex scanning is very useful, determine diameter & extension of Aneurysm , angiography shows the distal arteries BUT NOT show the diameter of aneurysm , CT scan is very accurate in diagnosis if repair is needed , US is screening test of choice .
- Q28:** Abdominal (AAA) is the most frequent type , affect aorta below origin of renal arteries in 95% of cases, it may extend to affect the iliacs.

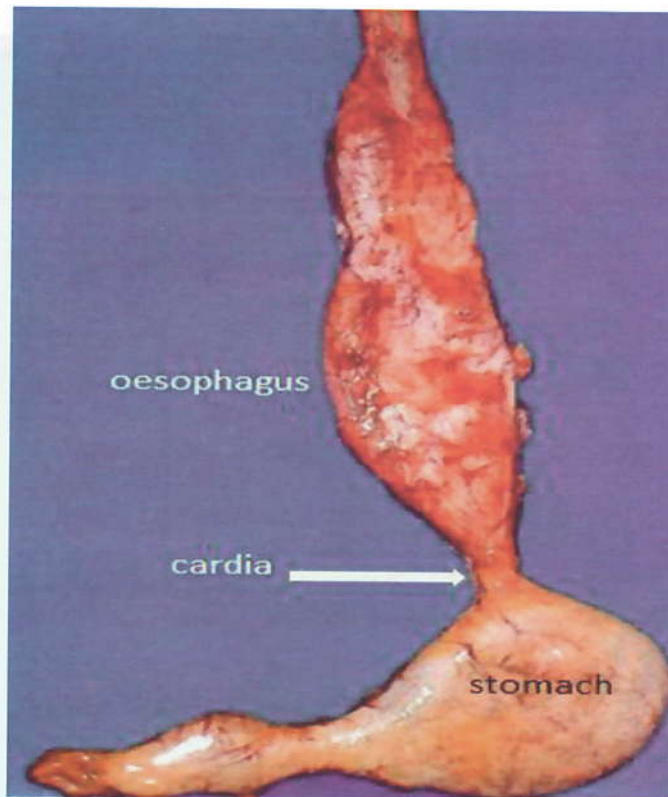
-4-

GIT Jars

Questions (true or false)

1. There is upper 1/3 esophageal dilatation
2. The lower end of esophagus is narrow and spastic
3. Usually affect old male
4. Acute dysphagia more to fluid is the usual presentation
5. Esophagitis is possible complication
6. Carcinoma never occur on top
7. Barium swallow is diagnostic
8. Esophgscopy and biopsy routinely done to exclude malignancy
9. GERD is a common complication
10. Treatment is only surgical

Achalasia of the cardia



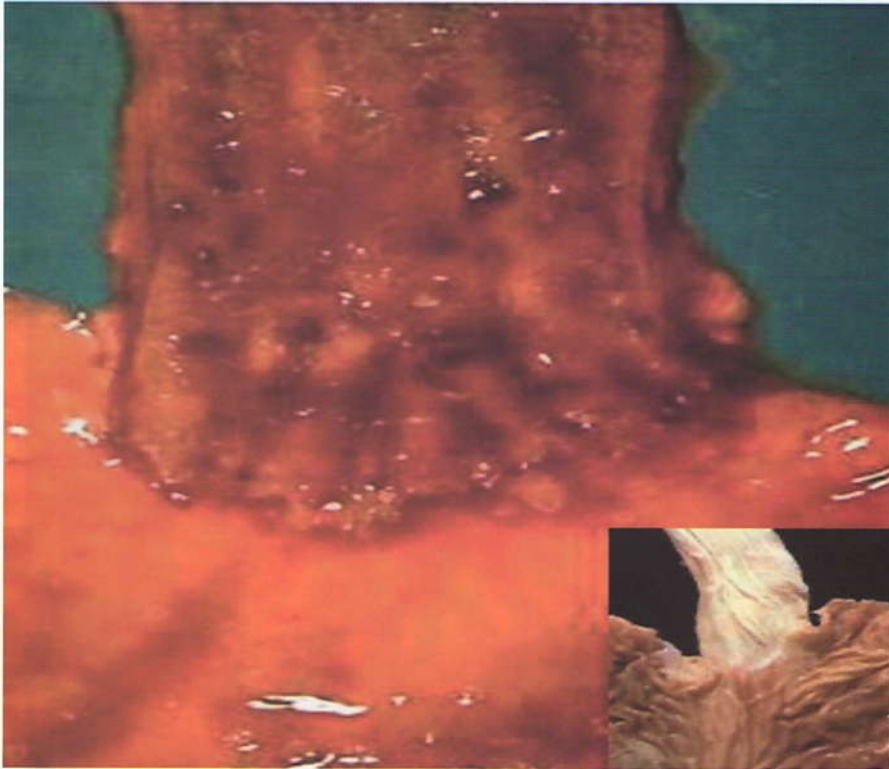
Achalasia of the cardia

- The oesophagus is markedly dilated.
- This dilatation ends smoothly at the cardia, which fails to relax at swallowing.
- Idiopathic disease (may be degeneration in vagal fibers & Auerbachs plexus.. also may be autoimmune)
- This is a postmortem specimen as surgery requires just division of the spastic lower esophageal sphincter, not excision of oesophagus and stomach

Questions (True or false)

1. There is upper 1/3 esophageal dilatation ()
2. The lower end of esophagus is narrow and spastic ()
3. Usually affect old male ()
4. Acute dysphagia more to fluid is the usual presentation ()
5. Esophagitis is possible complication ()
6. Carcinoma never occur on top ()
7. Barium swallow is diagnostic ()
8. Esophgосcopy and biopsy routinely done to exclude malignancy ()
9. GERD is a common complication ()
10. Treatment is only surgical ()

Esophagitis



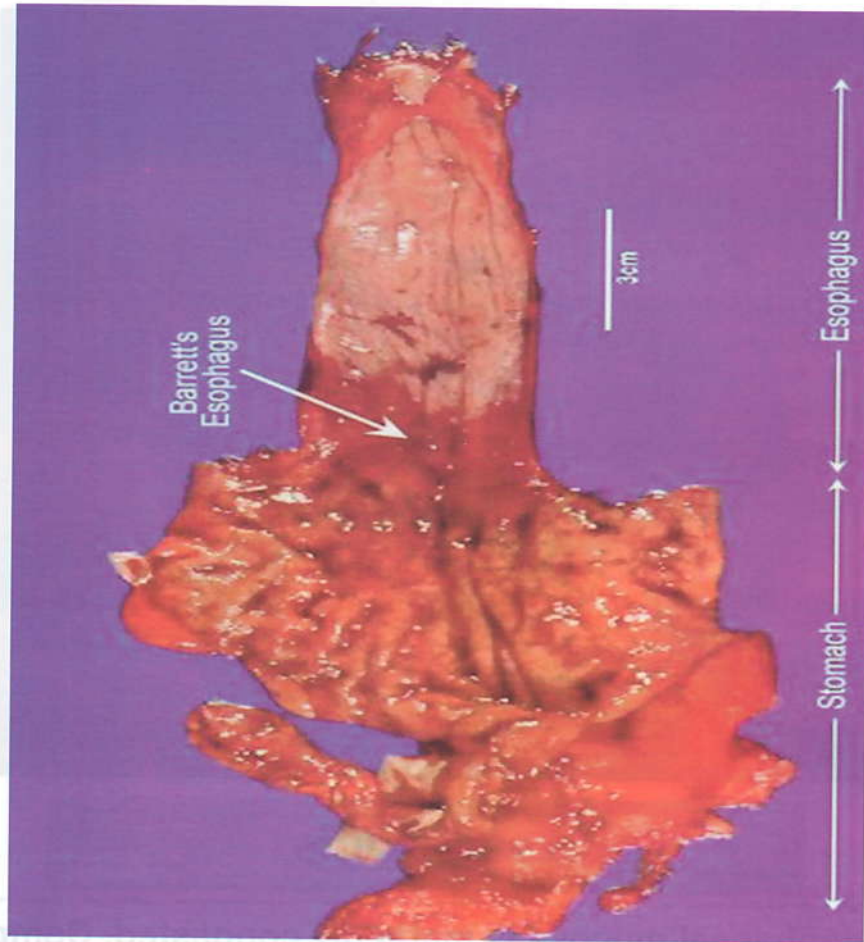
Esophagitis

- Lower esophageal mucosa is markedly congested. Compare with the normal appearance in the inset
- The commonest cause is gastro-oesophageal reflux disease (GERD) where the refluxing acid induces inflammation, ulceration and sometimes stricture. The destroyed lower oesophageal epithelium may be replaced by the creeping up columnar epithelium from the stomach (Barrett's oesophagus)
- Other causes of esophagitis include infections, stasis as with achalasia and ingestion of corrosive substances

Questions (True or false)

1. The mucosa shows multiple minute ulceration ()
12. GERD is a possible predisposing factor ()
13. Columnar metaplasia occur on top ()
14. Corrosive can be underlying cause ()
15. Esophageal carcinoma is a rare complication ()
16. Endoscopy and biopsy is required ()

Barrett's Oesophagus



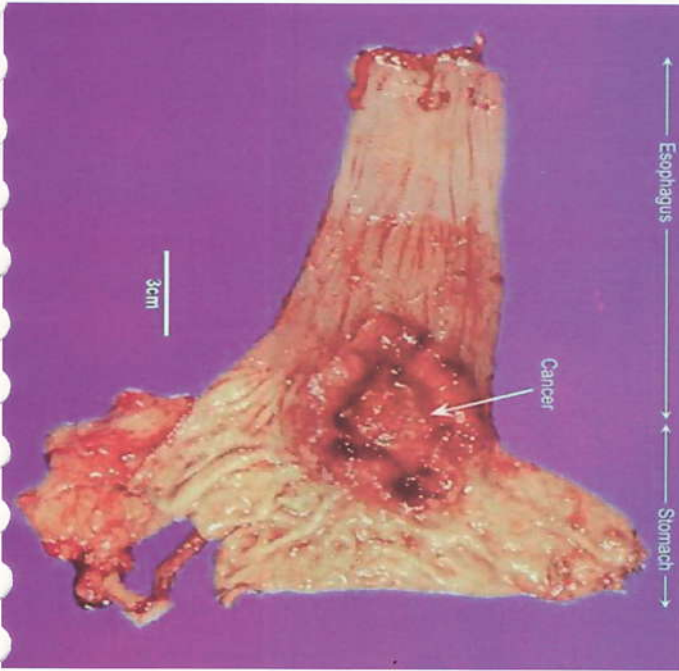
Barrett's Oesophagus

- A result of GERD
- The mucosa in the lower part of oesophagus here looks like gastric mucosa as it is now lined with columnar epithelium
- Precancerous. Predisposes to adenocarcinoma

Questions (True or false)

17. There is an area of hyperemia, congestion in lower esophagus ()
18. There are multiple ulcers on top of this zone at lower esophagus ()
19. GERD IS a possible predisposing factor ()
20. Squamous metaplasia occur on top ()
21. Mucosa covering the lower esophagus in this case is stratified squamous ()
22. May be on top of sliding hiatus hernia ()
23. Esophageal carcinoma is a rare complication ()
24. Easily seen by barium swallow ()
25. May be on top of achalasia of the cardia ()

Oesophagus Cancer



Barrett's and Cancer

- A grossly malignant ulcer in lower oesophagus (which is covered by dark-looking columnar epithelium)
- Extends into the cardia
- Adenocarcinoma

Oesophagus Cancer

- Majority of oesophageal cancers are squamous cell carcinomas as they arise from stratified squamous epithelium
- Notice the pale pink color of this epithelium

Questions (True or false)

26. A picture of benign esophageal mass ()
27. There is an area of hge and necrosis ()
28. It occupies the middle 1/3 of the esophagus ()
29. It is squamous cell carcinoma on top of barret esophagus()
30. Lower 1/3 is the commonest site for that pathology ()
31. Direct spread is the earliest and most dangerous ()
32. Transthelomic spread is the main route of spread if occur in the upper 1/3 of the esophagus ()
33. Usually affect old males ()
34. Dysphagia is the main symptom ()
35. Clinically dysphagia is more to fluid ()
36. Deep cervical LN are the 1st lymph nodes to be enlarged ()
37. Barium swallow is essential in diagnosis ()
38. Most cases are operable at the time of presentation ()
39. Operable cases treated by total esophogectomy ()
40. There is an ulcer on top of this mass has a raised everted edge()

Esophageal Leiomyoma



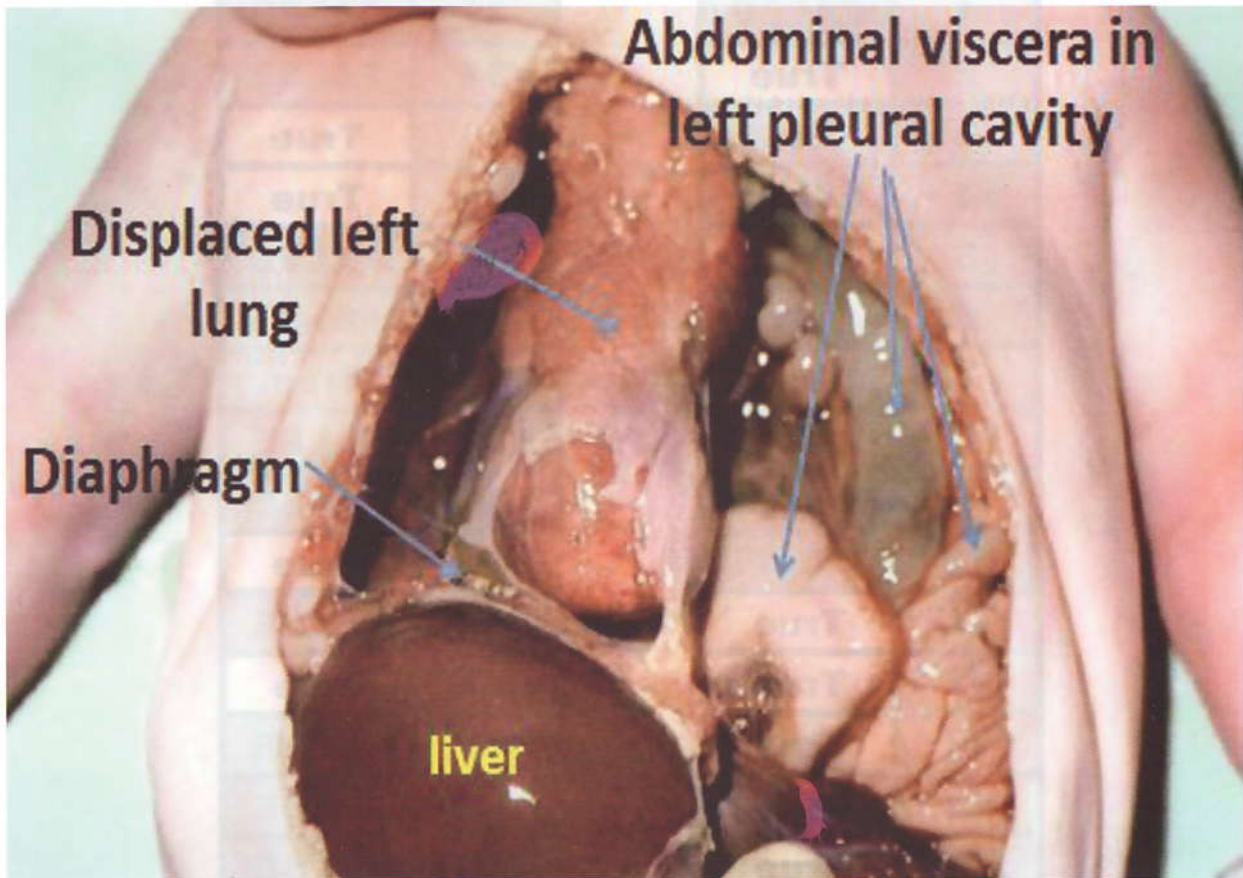
Esophageal Leiomyoma

- Commonest benign tumor of the oesophagus
- A benign tumor of smooth muscles
- Intact mucosa
- Well-defined edges
- The tumor is easily enucleated without removal of oesophagus.
- This is not a surgical specimen. It is a postmortem one.

Questions (True or false)

41. This lesion may cause Dyspnea, hemoptysis& wheezes. ()
42. Trachea is central. ()
43. This lesion is definitely bronchogenic carcinoma. ()
44. This lesion may bronchial adenoma ()
45. Biopsy is indicated. ()
46. There is evidence of mucosal infiltration in this picture ()
47. GERD IS a possible predisposing factor ()
48. Total esophogectomy and gastric pull up is the ttt of choice ()

Congenital Diaphragmatic Hernia



Congenital Diaphragmatic Hernia

- Postmortem picture of a neonate who died shortly after birth due to respiratory failure

Questions (True or false)

- | | |
|---|-----|
| 49. A premortem specimen for chest and abdomen | () |
| 50. There are loops of intestine in thoracic cavity | () |
| 51. This is a sliding hiatus hernia | () |
| 52. Bochdalek hernia is more common on Rt side | () |
| 53. Presented by cyanosis and scaphoid abdomen in 1st day of life | () |
| 54. Chest auscultation denotes diminished air entry | () |
| 55. The most common complication is strangulation | () |
| 56. Plain x ray is diagnostic | () |
| 57. Mechanical ventilation is a must pre and post operation | () |
| 58. Treatment is delayed till age of 10 months | () |

Esophagous Key answer

1	FALSE
2	True
3	FALSE
4	FALSE
5	True
6	FALSE
7	True
8	FALSE
9	FALSE
10	FALSE
11	True
12	True
13	True
14	True
15	True
16	True
17	True
18	True
19	True
20	FALSE
21	FALSE
22	True
23	False
24	True
25	FALSE
26	FALSE
27	True
28	Accord
29	FALSE
30	False

31	FALSE
32	FALSE
33	True
34	True
35	FALSE
36	FALSE
37	True
38	FALSE
39	FALSE
40	True
41	FALSE
42	True
43	FALSE
44	FALSE
45	FALSE
46	FALSE
47	FALSE
48	FALSE
49	FALSE
50	True
51	FALSE
52	FALSE
53	True
54	True
55	FALSE
56	True
57	True
58	FALSE

Important points& tweets based on our questions

- Q2:** Achalasia is due to failure of cardiac sphincter to relax during swallowing , so progressive dilatation of oesophagus.
due to degeneration in vagal fibres & Auerbach's plexus .
- Q3:** Disease occur more commonly in 2nd -4th decade, equal in both sexes .
- Q4:** Slowly progressive long standing dysphagia more to fluids than solids ..
at 1st intermittent.
- Q6:** cancer may develop in 5% of cases after 20 years.
- Q7:** Ba swallow is diagnostic , showing smooth round termination of lower end of oesophagus(Hen's peak) .
- Q10:** TTT can be by drugs as nitrates & ca channel blockers but limited values, or forceful dilatation of cardia by hydrostatic or pneumatic dilators,
surgery (HELLER'S operation) cardiomyotomy is most reliable method.
- Q20:** Barrett's oesophagus is a columnar metaplasia of epithelium of lower oesophagus , may be gastric or intestinal , intestinal type is premalignant , develop adenocarcinoma .
- Q26 :**Cancer oesophagus occur after age of 50 years , more in males than females except cervical type may be more in females .
- Q30:** commonest in middle 1/3 (45-50%) then lower 1/3(33%) .
- Q32:** Tumor spread directly in the circumferential & longitudinal of the wall , then infiltrate to adjacent structures .
- Q34:** PROGRESSIVE CONTINUOUS DYSPHAGIA 1st to solids then for fluids , the patient can't swallow his own saliva.
- Q37 :** Ba swallow .. cauliflower lesion produce persistent irregular filling defects, characteristic shouldering , differentiates between achalasia & carcinoma.

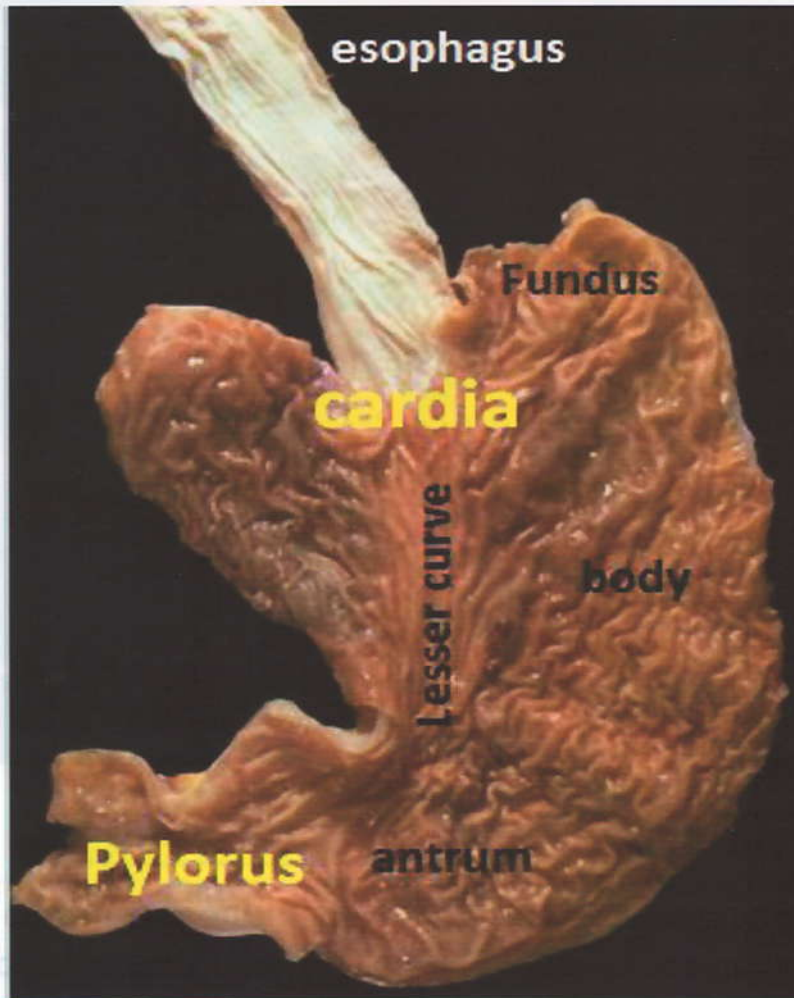
Q39: Radical surgery , for pts with good general conditions & resectable lesion , idea is to resect the lesion & adequate safety margin on either sides (10 cm) , then restore the continuity of GIT .

Q52: Bockdalac hernia is 90% of cases more on left side 5:1 right .

Q53: Diaphragmatic hernia presents after birth in severe cases by respiratory distress & gasping . cyanosis & tachypnea , heart sounds heard on right side , intestinal sounds heard in chest , scaphoid abdomen.

Q56 : chest Xray reveals gas shadow of stomach or bowel in th thorax.

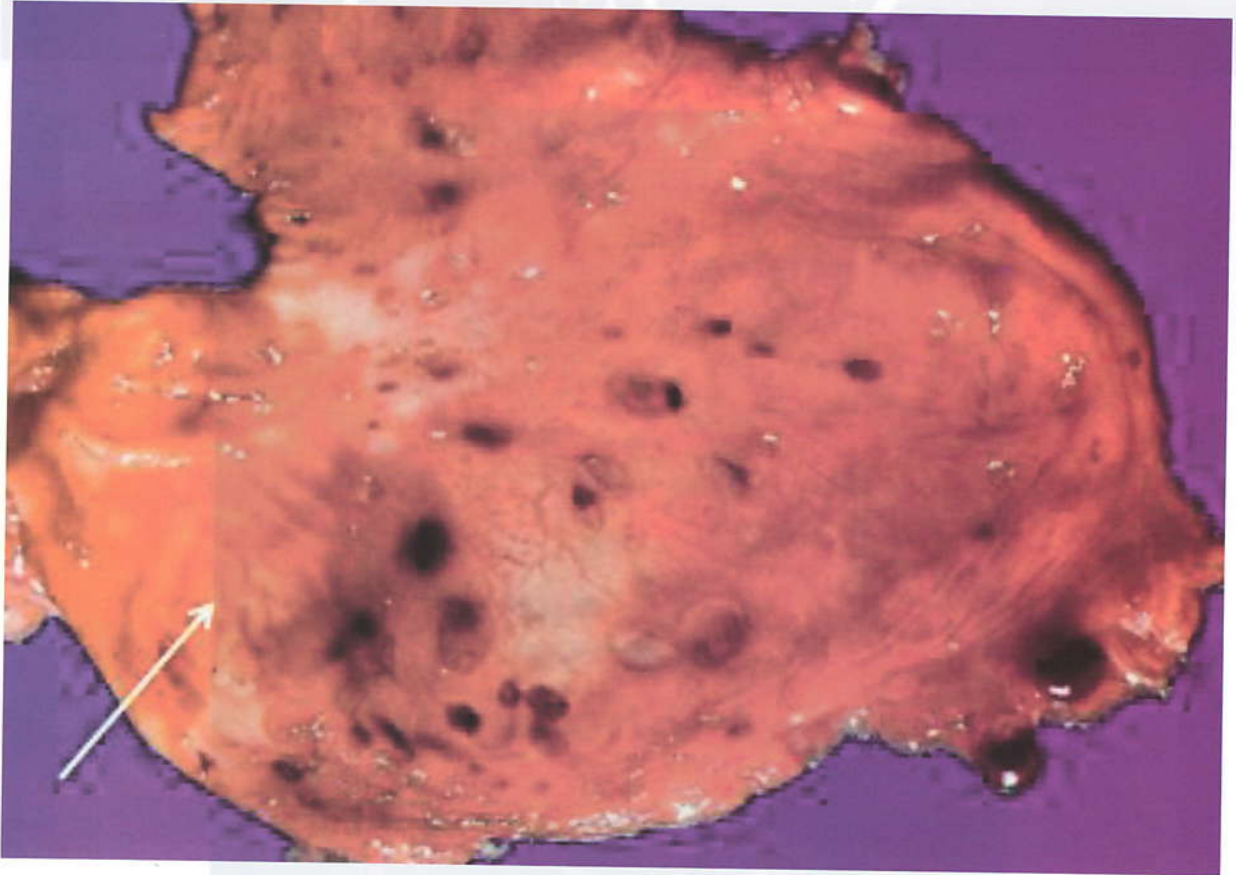
Normal Stomach



Normal Stomach

- Oesophagus and stomach opened to reveal mucosal surfaces
- Stomach opened at greater curvature
- Oesophageal mucosa is paler as it is formed of multiple layers of cells (stratified squamous)
- Gastric mucosa is darker as it is formed of a single layer of columnar cells. It is thrown into folds called rugae
- Notice transition of epithelium at gastro-oesophageal junction

Acute Gastric Erosions



Acute Gastric Erosions

- The stomach is opened to show its mucosal surface
- The stomach is identified by being a capacious hollow organ.
- Its mucosa forms many folds; rugae, which are not prominent here but can be seen at the tip of the white arrow
- The mucosa is seat of multiple superficial hemorrhagic ulcers
- The usual cause is the ingestion of aspirin and other NSAIDs

Questions (True or false)

1. Gastric mucosa shows hyperemia with small malignant ulcers ()
2. These ulcers usually deep reaching musculosa ()
3. 1st part of the duodenum is a common site ()
4. Common in ICU patient and burns ()
5. Hematemesis and epigastric pain are usual presentation ()
6. Barium meal in Trendelenberg position is diagnostic ()
7. Treatment is mainly by generous gastrectomy ()
8. Endoscopy is both diagnostic and therapeutic ()

Benign Chronic Gastric Ulcer



- Deep ulcer
- The convergence of mucosal folds on ulcer signify attempts at healing by fibrosis, which is a character of benign ulcers
- All gastric ulcers should raise suspicion of malignancy.
- They should all be endoscopically biopsied
- Suspicion of malignancy is higher when
 - Ulcer in atypical place (not on lesser curve or antrum)
 - Large ulcer >2cm
 - Ulcer that does not respond to treatment



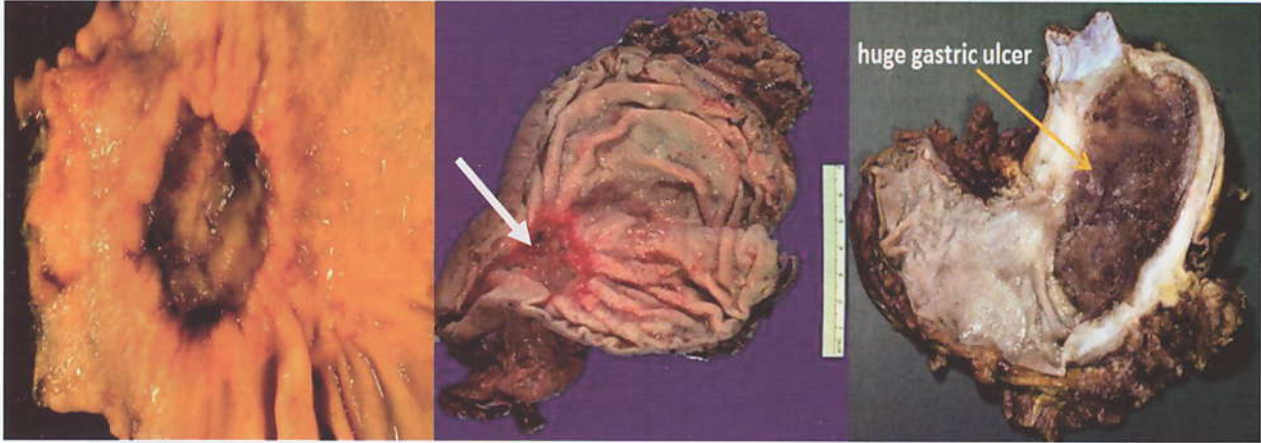
- Part of stomach wall
- The converging mucosal folds suggest a benign (peptic) ulcer
- Still multiple biopsies of the ulcer circumference is needed in order to look for possible malignancy
- An ulcer of the duodenum needs not to be biopsied as it is always benign

Benign Chronic Gastric Ulcer

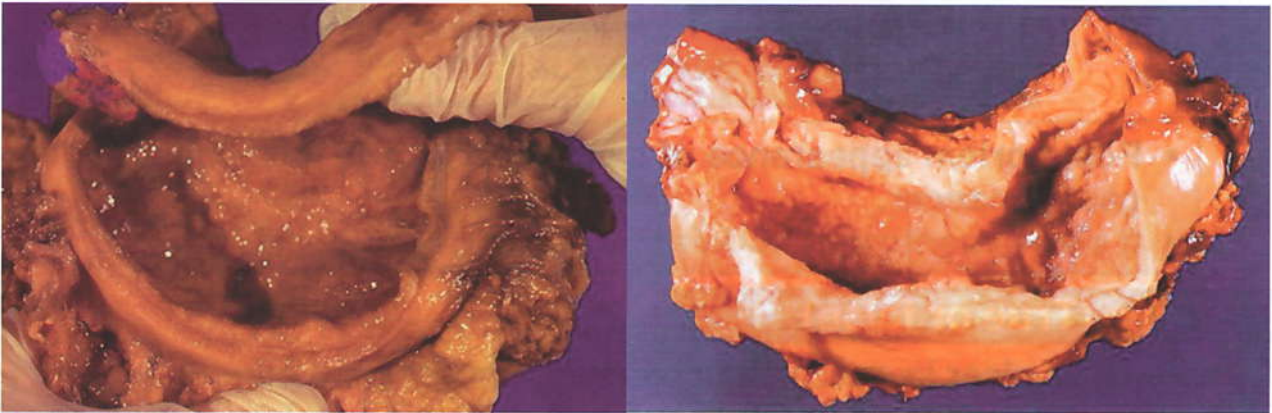
Questions (True or false)

9. There is large duodenal ulcer ()
10. There is a malignant ulcer in gastric mucosa ()
11. The ulcer has sharp edge with granulation floor ()
12. Rugae radiating from ulcer edge all around ()
13. Mucosa surrounding ulcer is infiltrated by a malignant tissue ()
14. The ulcer is superficial only affecting mucosa ()
15. Atrophic gastritis is a predisposing factor ()
16. Usually affect greater gastric curvature ()
17. Commonly affect middle aged female ()
18. Epigastric pain is the cardinal symptom ()
19. Pain increased by fasting and relieved by eating ()
20. Hematemesis is a possible complication ()
21. Pain usually diffuse all through abdomen with rebound tenderness ()
22. Endoscopy is of choice ()
23. Biopsy needed only in duodenal ulcers ()
24. CT is needed in recurrent cases ()
25. Barium meal shows filling defect shouldering ()
26. Treatment is essentially medical ()
27. Resistant cases need vagotomy and pyloroplasty ()
28. Perforation is more common but less serious than duodenal ()
29. Resistant pain may denotes malignant transformation ()
30. Eradication of H. pylori decrease recurrence rate ()

Stomach Cancer

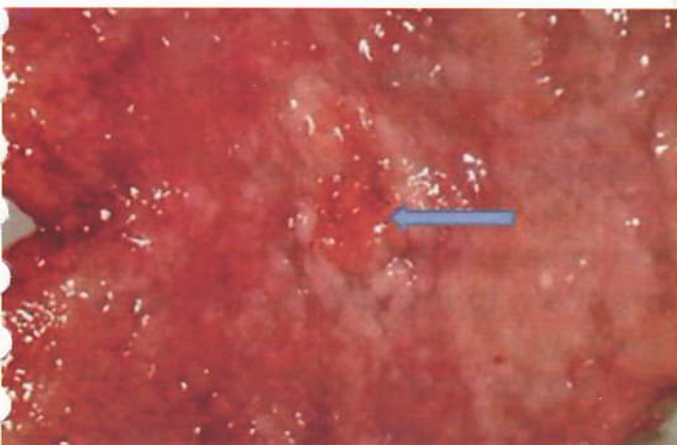


- A big ulcer in the stomach is likely to be malignant

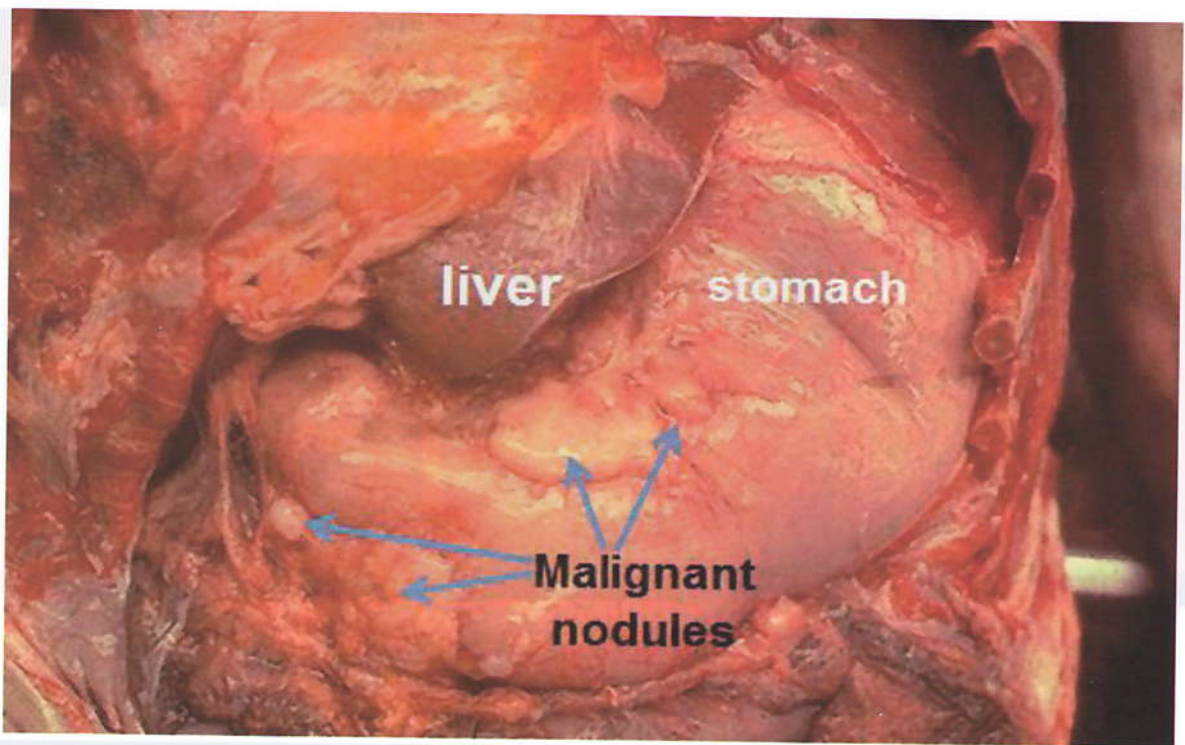


Stomach Cancer (Linitis Plastica)

- Gastric cancer may spread within the wall.
- The stomach becomes stiff and narrow with a thickened wall.
- It looks like a leather bottle



- A gastric ulcer, however superficial, should be biopsied. In this case it turned out to be malignant
- Prognosis depends largely on depth of invasion. In early gastric cancer the tumor does not invade deeper to the muscularis mucosa



Advanced Stomach Cancer

- Postmortem appearance of a patient who had advanced gastric cancer.
- It shows peritoneal nodules

Questions (True or false)

31. There is an ulcer in gastric mucosa with undermined edge ()
32. The mass seen shows hemorrhage and necrosis ()
33. There is thickening of gastric wall ()
34. The gastric lumen is reduced all around by this mass ()
35. This mass is mainly in the gastric fundus ()
36. Microscopically it is mainly squamous cell carcinoma ()
37. Usually affect old males ()
38. Smoking can cause peptic but not this pathology ()
39. Spread is early by lymphatics ()
40. Esophagus and duodenum infiltrated easily ()
41. Suspected in cases of resistant dysphagia more than 2 weeks ()
42. Epigastric mass is the commonest presentation ()
43. Peptic ulcer that become resistant to treatment may denotes this pathology ()
44. Bleeding and perforation are common presentation ()
45. Barium meal can diagnose and differentiate types of this pathology ()
46. Diagnosis not reached without endoscopy ()
47. Operable cases treated surgically by radical resection ()
48. Inoperable cases treated by chemotherapy and gastrojejunostomy ()
49. About 80% of cases are operable at the time of presentation ()

Stomach Key answer

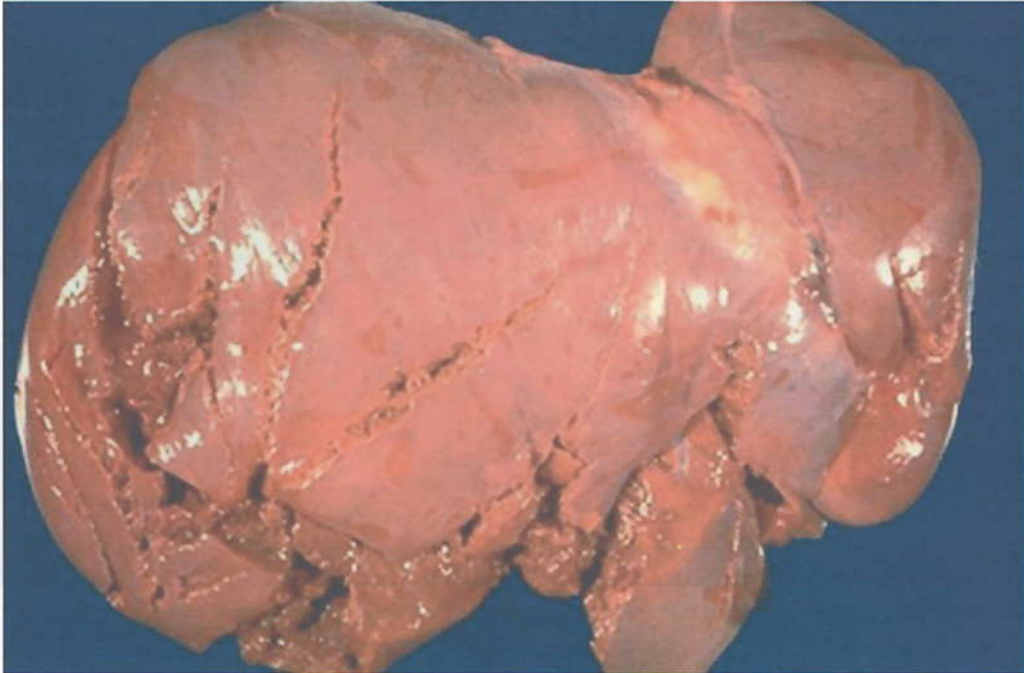
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26	True
27	FALSE
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29	True
30	True

31	FALSE
32	True
33	Accord
34	Accord
35	Accord
36	FALSE
37	True
38	FALSE
39	True
40	True
41	FALSE
42	FALSE
43	True
44	FALSE
45	True
46	True
47	True
48	FALSE
49	FALSE

Important points & tweets based on our questions

- Q2:** Shallow ulcers in mucosa & submucosa.
- Q4:** ICU pt due to stress../.. burn → curling's ulcer.
- Q6:** endoscopy shows the ulcer & congested mucosa.
- Q14:** the ulcer base usually lies in muscle coat or may transgress the duodenum to lies in pancrease.
- Q17:** More in males.
- Q18:** deeply seated epigastric pain.. boring in character .
- Q19 :** gastric ulcer pain decreases by fasting & vomiting .
- Q23:** 4 quadrant punch biopsies needed in gastric ulcer, may be malignant. Not needed in duodenal ulcer.
- Q25:** Barium shows the ulcer niche, crater, ulcer notch .
- Q36:** stomach cancer is adenocarcinoma mainly, may be colloid carcinoma with bad prognosis as in Linitis plastica .
- Q40:** Direct spread in wall of stomach in depth, circumference & length , then can reach any near organ.
- Q43:** mass group only 30%.
- Q45 :** Ba meal accuracy 70%.
- Q46:** Endoscopy , can directly views the tumor & allow taking biopsies from the tumor .

Liver Injuries



Liver Injury

- The liver shows multiple lacerations, likely caused by severe trauma
- Severe trauma commonly injures other organs in the abdomen and chest
- The cause of death is bleeding
- This is a postmortem specimen as the treatment of liver injuries is never a total hepatectomy

Questions (True or false)

1. This is the most abdominal organ to be injured ()
2. Its enlargement is a predisposing factor ()
3. The main cause of death is peritonitis ()
4. Usually associated with other injuries ()
5. It gives peritonitis like picture on examination ()
6. The most important diagnostic tool are US,CT ()
7. Ttt is mainly conservative ()
8. The priority in the operation is for suturing of the tear ()
9. It is post-operative specimen ()
10. Prognosis depend mainly on associated injuries ()
11. Mortality rate is about 40%-50% ()
- Management priorities are ABC for this patient ()

Liver Abscess



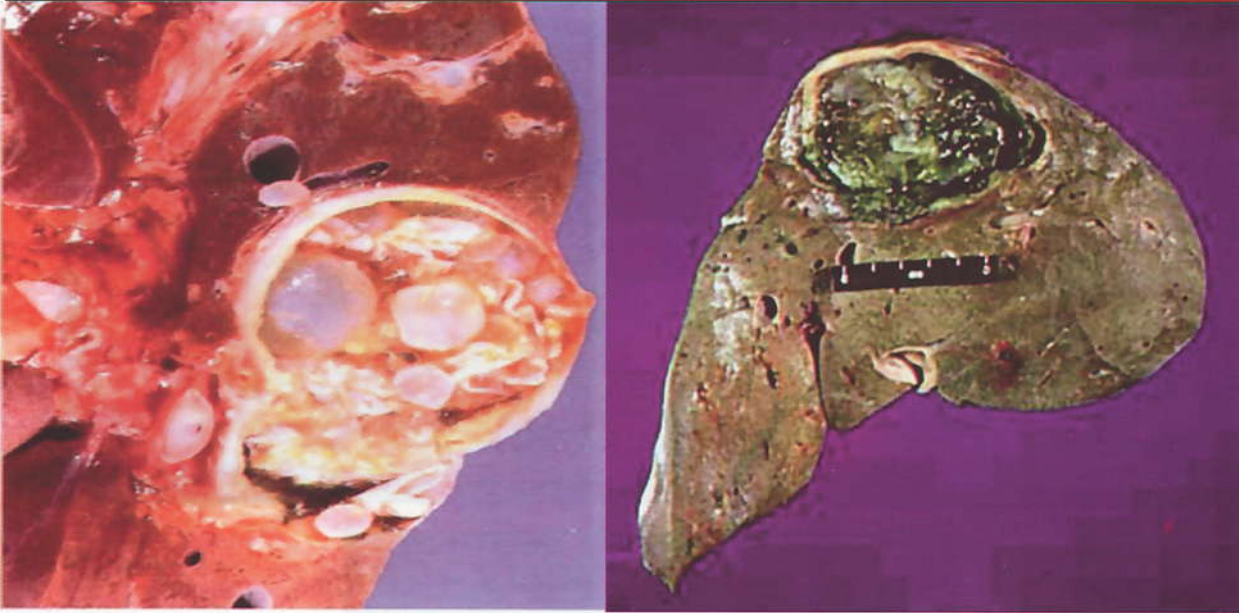
Liver Abscess

- The liver shows multiple cavities that are lined with necrotic tissues
- The fluid obtained from these cavities is shown here to have a brown colour that is likened to chocolate or anchovy sauce
- This brown colour favours diagnosis of multiple amoebic abscesses.
- This diagnosis was confirmed histologically

Questions (True or false)

- | | |
|---|-----|
| 12. This is a post-operative specimen | () |
| 13. Malignancy is a predisposing factor | () |
| 14. The content of the cavity is a chocolate pus | () |
| 15. The source of parasite is the right colon | () |
| 16. Usually affect the postero-superior aspect of Rt hepatic lobe | () |
| 17. Biopsy from the center of the cavity is diagnostic | () |
| 18. It can complicate with pyogenic abscess | () |
| 19. Metronidazole is the initial treatment | () |
| 20. Hepatic lobectomy is the principle treatment | () |
| 21. Rupture in the surrounding is a common complication | () |

Liver Hydatid



Liver Hydatid

- A section of the liver that shows a well-defined cyst with a thin wall.
- The cavity is filled with daughter cysts
- Disease is caused by the parasite *Echinococcus granulosus*
- The liver is the commonest site of affection
- Care is taken during surgery not to rupture it to avoid peritoneal implantation of daughter cysts or anaphylaxis by hydatid fluid
- A liver hydatid may take a green colour if it communicates with the intra-hepatic bile ducts

Questions (True or false)

22. This is a degenerative liver disease ()
23. Man is the definitive host for this parasite ()
24. Route of infection mainly oral ()
25. Commonest site is Rt. lobe ()
26. Usually multiple in number ()
27. It is cystic in consistency with non-allergic central fluid ()
28. Pain is the commonest presentation ()
29. Has a special geographical distribution ()
30. Rupture is the commonest complication ()
31. In majority in cases the cyst gradually decrease in size ()
32. You must aspirate the cyst to diagnose the case ()
33. Sonar and serology are the most important 2 tool for diagnosis ()
34. This case may be complicated by obstructive jaundice ()
35. Treatment mainly medical ()
36. Hepatic lobectomy is the best surgical treatment ()

Liver Cirrhosis



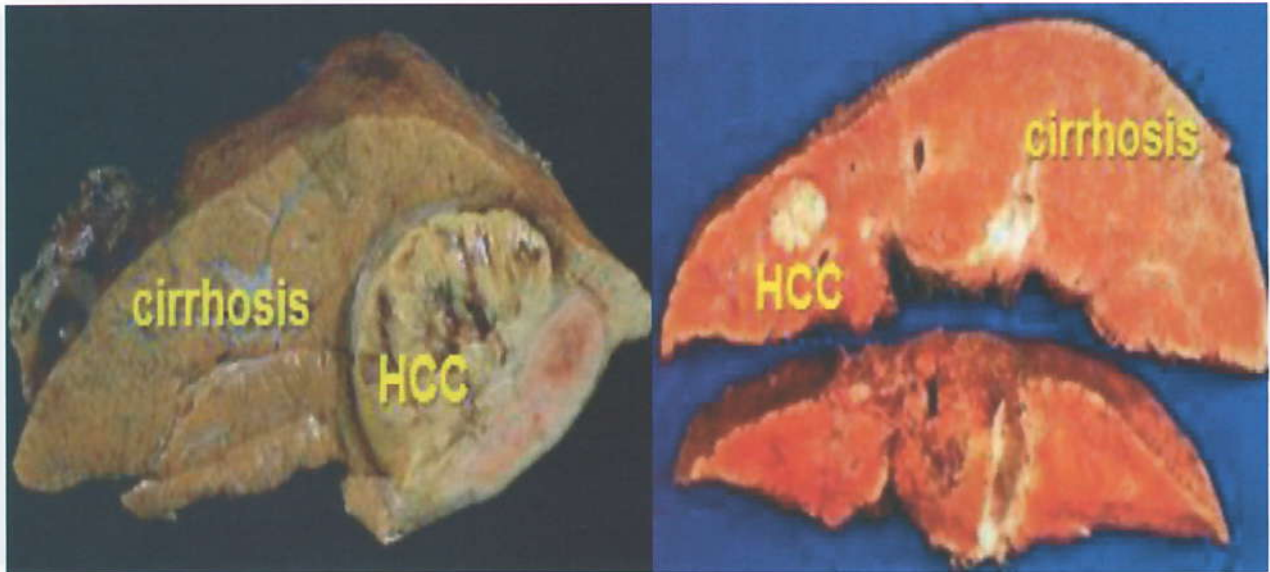
Liver Cirrhosis

- Commonest cause of liver cirrhosis in Egypt is viral hepatitis (B & C)
- Diffuse affection of the liver. Its components are
 - Liver cell necrosis
 - Liver cell regeneration
 - Loss of hepatic architecture
 - Fibrosis
- Cirrhosis is more serious than periportal fibrosis that is caused by Schistosomiasis
- Consequences of importance to surgeons are:
 - ✓ Liver cell failure
 - Hypoalbuminaemia impairs healing of wounds
 - Ascites ↑ intra-abdominal pressure (hernia & burst abdomen)
 - Hypoprothrombinaemia causes bleeding tendency
 - ✓ Portal hypertension
 - Oesophageal varices
 - Splenomegaly (and hypersplenism)
 - ✓ Hepatocellular carcinoma (HCC)

Questions (True or false)

37. This is a pre-mortem specimen ()
38. This liver specimen show HCC ()
39. Bilharziasis is the commonest cause for that pathology ()
40. This pathology is a rare cause for portal HTN ()
41. This patient may presented with splenomegaly ()
42. Esophageal varices one of the port systemic shunts ()
43. IN cases presented with esophageal varices rupture endoscope only diagnostic but not therapeutic ()
44. Sudden deterioration of this patient denote possibility of cancer liver ()
45. This patient need follow up by US, alpha FP ()

Hepatocellular Carcinoma (HCC)



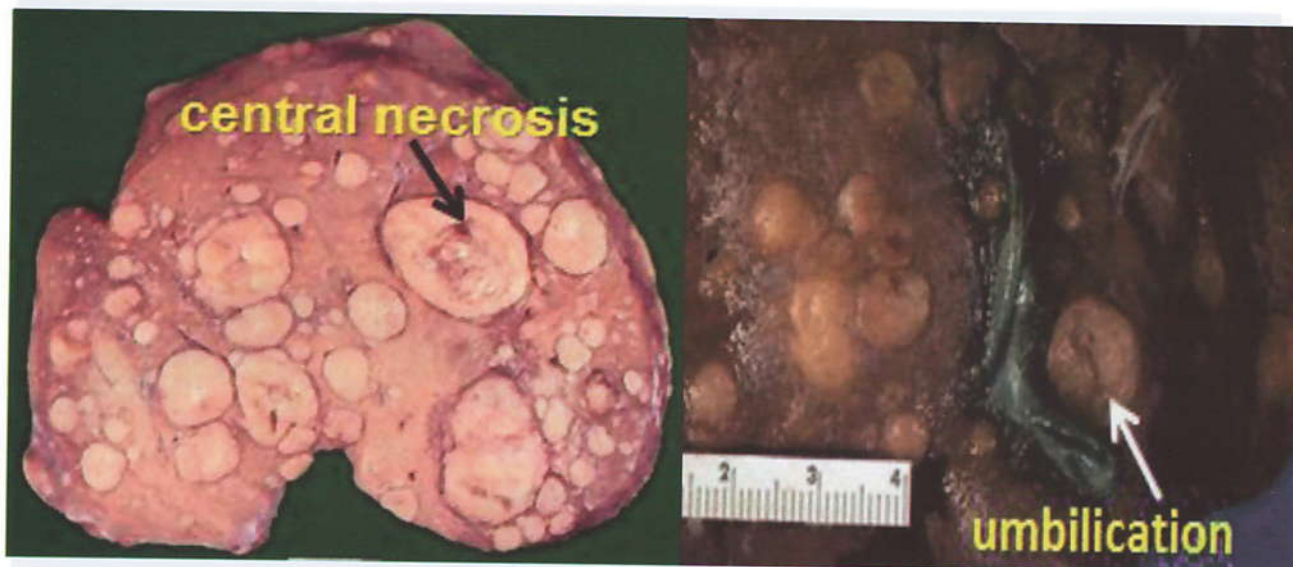
Cirrhosis & Hepatocellular Carcinoma

- Hepatocellular carcinoma (HCC) usually occurs on top of liver cirrhosis. It rarely affects a healthy liver
- The tumour is highly vascular, which distinguishes it at CT scan with IV contrast (triphasic CT). Metastasis, on the other hand, is hypovascular
- Alfa fetoprotein is markedly elevated

Questions (True or false)

46. This is a premortem specimen ()
47. This is a cirrhotic liver ()
48. This is the most common neoplasm in this organ ()
(metastases 20 times more common)
49. Commonly on top of cirrhosis ()
50. This mass has a well-defined edge ()
51. It is a cause for heamoperitoniem ()
52. Resistant ascites one of presentation<is a clue for susption> ()
53. Anemia is one of occult presentation ()
54. The most common presentation is RT hypochondria mass ()
55. CT is diagnostic ()
56. Alpha feto protein is the most specific tumor marker ()
57. FNAB is important ,simple procedure for diagnosis ()
58. More than 90% of cases is operable ()
59. The main line of spread is by portal vein ()
60. RT supraclavicular lymph node may be enlarged ()
61. You can exclude the presence of this mass with negative alpha FP ()

Liver Metastasis



Liver Metastasis

- Metastases are the commonest of liver malignancies
- Metastases are usually multiple
- Usually arrive through portal vein. Primary cancer is found in stomach, colon, rectum or pancreas
- May arrive through hepatic artery as in the case of breast cancer
- Characterized by poor vascularity relative to its rapid growth. The result is central necrosis and collapse of the nodule.
- This shows on the liver surface as a depression called umbilication
- Liver metastases almost always indicate a non-curable disease
- The exception is a resectable colon or rectal cancer with localised liver metastasis where excision of both the primary and secondary may be curative

Questions (True or false)

- | | |
|---|-----|
| 62. The 2th most common malignant liver tumor | () |
| 63. Breast cancer is the most common 1ry tumor | () |
| 64. Spread mainly through portal route | () |
| 65. CT is diagnostic | () |
| 66. Treatment in most cases are palliative | () |
| 67. It may be operable if the source is pancreas | () |
| 68. Radiotherapy is commonest palliative ttt | () |
| 69. May be presented by hepatomegaly | () |
| 70. Alpha fetoprotein is always elevated | () |
| ...(Alkaline phosphatase & bilirubin are usually elevated) | |

Gall Stones



- The gall bladder is identified by:
 - ✓ Hollow organ
 - ✓ Pear shaped
 - ✓ Has a blind broad end and a narrow end that may be tied with a ligature
 - ✓ May contain stones



- Obstruction of gall bladder neck without infection causes mucocoele
- In this case it occurred on top of chronic cholecystitis



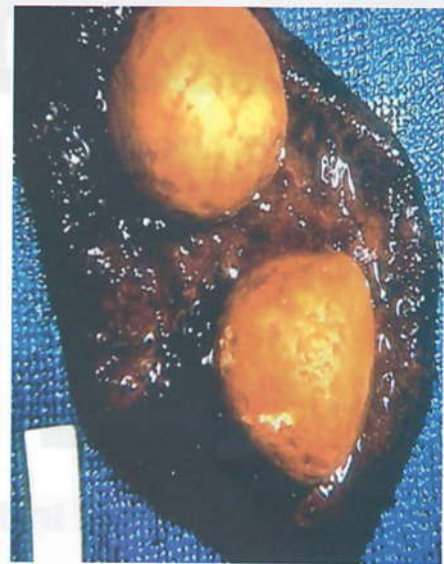
- Gall bladder is packed with faceted stones.
- These are mixed stones
- Gall bladder wall is thick and its outer surface is not smooth because of adhesions

Chronic calcular cholecystitis



Acute calcular cholecystitis

- The gall bladder is the seat of multiple mixed stones (commonest type)
- Mucosa is hemorrhagic



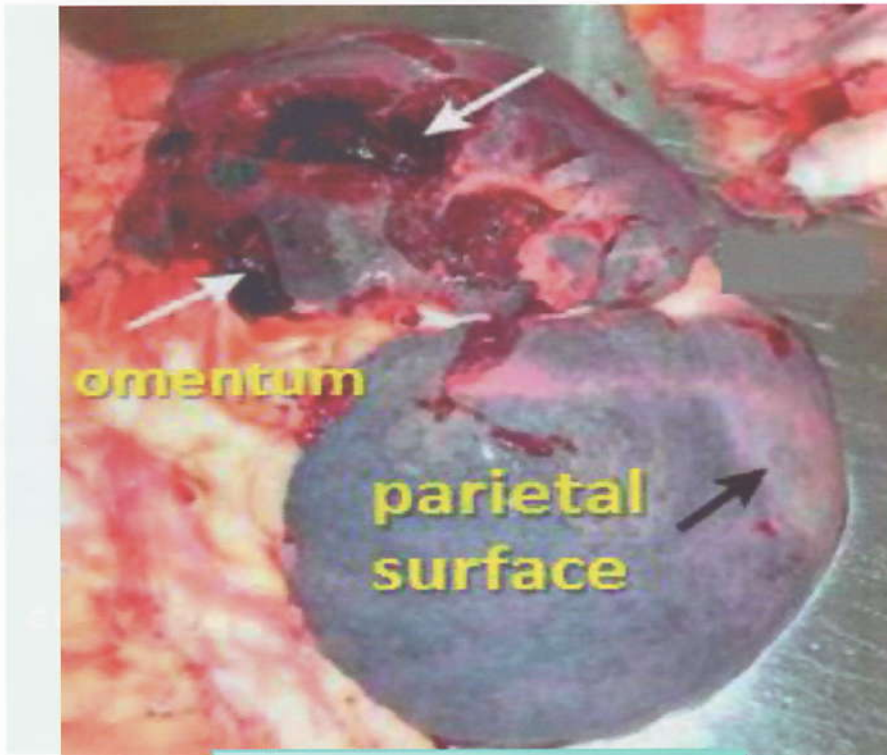
Acute gangrenous cholecystitis

- Gall bladder is slit open to show two big stones
- The wall is black
- Diabetics are particularly prone to develop gangrene in case of acute inflammation

Questions (True or false)

71. This is a case of acute calcular cholecystitis ()
72. This is a cholesterol stone ()
73. This is the commonest radiopaque stone ()
74. More than 80% is asymptomatic ()
75. Recurrent infection is a common complication ()
76. The most important diagnostic tool is ERCP ()
77. The standard treatment is ESWL ()
78. May be complicated with obstructive jaundice ()
79. Intestinal obstruction is a possible complication and treated mainly conservative ()
80. ERcP mandatory in all cases ()
81. Whatever the time of presentation urgent cholecystectomy done ()
82. This condition more common in males ()
83. In this case exploration of CBD in this case is a must ()
84. These stones are faceted ()
85. The wall is thickened and fibrosed ()
86. Gall bladder is gangrenous at its fundus ()

Ruptured Spleen



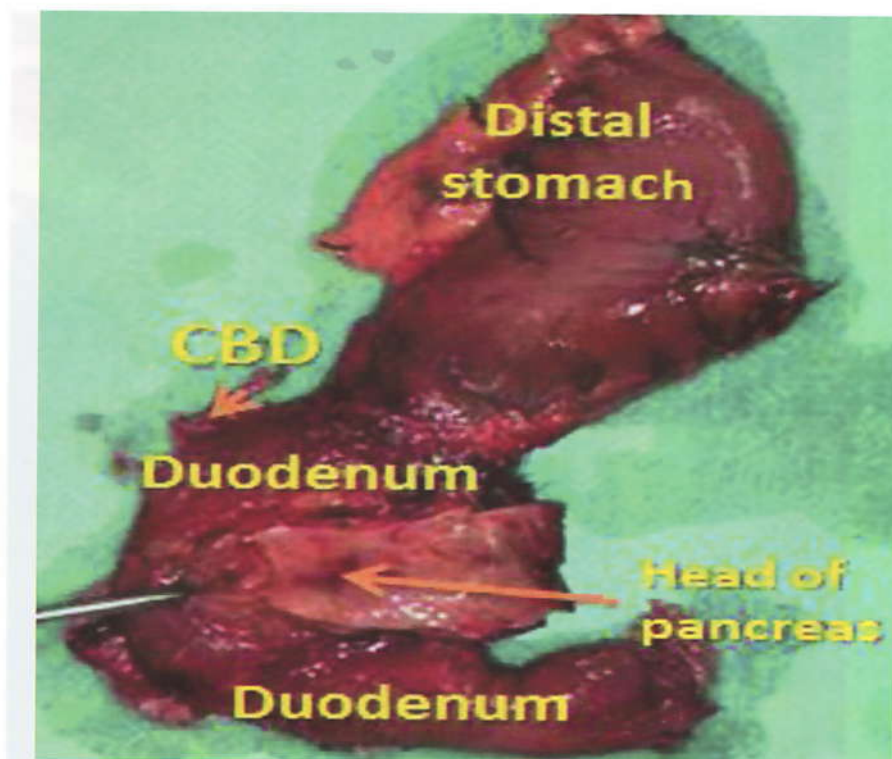
Ruptured Spleen

- The spleen is the site of multiple lacerations (white arrows)
- The omentum (policeman of the abdomen moved towards it in an attempt to seal bleeding vessels)
- The injured spleen bleeds profusely because its vessels are sinusoids that lack a muscle coat
- Treatment is urgent splenectomy
- This can be a surgical specimen
- Under certain conditions, the spleen may be preserved

Questions (True or false)

87. This organ the most abdominal organ to be injured ()
88. The commonest cause is iatrogenic ()
89. Bleeding less than rupture liver ()
90. This case may be presented by hypovolemic shock ()
91. Balance's sign is an early pathognomonic sign ()
92. The most important diagnostic tool is U/S and CT ()
93. Splenectomy is the ttt of choice in all age groups ()
94. Preoperative preparation needed before splenectomy in child before 5 years ()
95. Commonest complication of Splenectomy is OPSI ()
96. Treatment is mainly conservative ()

Pancreatic Head Cancer



Pancreatic Head Cancer

- A pancreatico-duodenectomy specimen (Whipple operation). The gall bladder is usually also removed
- Adenocarcinoma arising from exocrine part of pancreas or lower end of common bile duct (periampullary carcinoma)
- Causes obstructive jaundice

Questions (True or false)

97. The commonest GIT malignancy ()
98. Usually squamous cell carcinoma of ductal origin ()
99. Is a cause of intermittent jaundice ()
100. Chronic inflammation especially in DM is a predisposing factor ()
101. Mostly occur in the tail ()
102. Painful jaundice in old age is the classic picture ()
103. Asthenia is common ()
104. Usually less than 1 cm at time of presentation ()
105. Is a cause for portal HTN ()
106. May be a source for liver metastasis ()
107. Operable cases treated by pancreatico-duodenostomy ()
108. Prognosis is very good with 50% 5 years survival rate in whipple ()
109. In whipple the duodenum is removed but leave the gall bladder ()
110. There is whitish mass with hge and necrosis ()

Hepatobilliary Key answer

1	FALSE
2	True
3	FALSE
4	True
5	True
6	True
7	FALSE
8	FALSE
9	True
10	True
11	FALSE
12	Accord
13	FALSE
14	FALSE
15	True
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60	FALSE

61	FALSE
62	FALSE
63	FALSE
64	FALSE
65	True
66	True
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68	FALSE
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70	True
71	FALSE
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73	Accord
74	Accord
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84	Accord
85	Accord
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90	FALSE

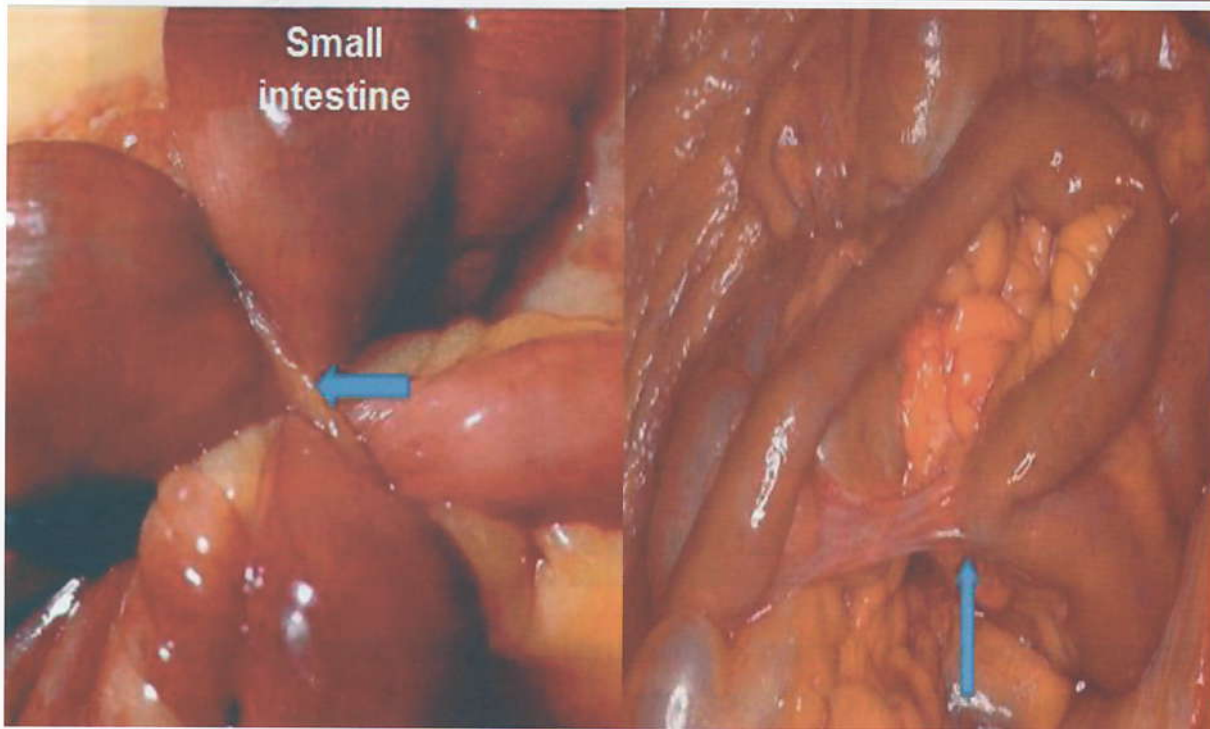
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99	FALSE
100	True
101	FALSE
102	FALSE
103	FALSE
104	True
105	FALSE
106	True
107	True
108	True
109	FALSE
110	FALSE
111	True

Important points& tweets based on our questions

- Q1:** Liver is 2nd common solid organ after spleen to be injured.
- Q3:** internal hge & bleeding & shock.
- Q8:** arrest bleeding and stabilize the pt.
- Q11:** mortality is 15-20% & increase if other major organ is injured.
- Q 20:** conservative ttt is highly successful for liver amoebic abscess.
metronidazole 800 mg 3 times daily for 7-10 days.
- Q 23:** Man is considered accidental intermediate host . in case of hydatid infection.
- Q28:** 70% of hydatid cyst cases present by painless fluctuant swelling .
- Q48:** Liver metastasis 20 times more common than 1ry liver neoplasms.
- Q70:** alkaline phosphatase & bilirubin usually elevated in liver cancer.
- Q82:** calcular cholecystitis common in females 3:1 than males .
- Q93:** every attempt should be made to preserve the spleen in children below 15 years .
- Q99:** **MALIGNANT OBSTRUCTIVE JAUNDICE** can be intermittent if obstructing periampullary sloughs .
- Q101:** 60% of cancer pancrease are in the head , the rest are in body & tail of the head 2/3 are in head proper, 1/3 are periampullary.
- Q109:** in whipple operation we remove :
- Head & neck of pancrease
 - Whole duodenum as it shares same blood supply as head of pancreas
 - Antrum of stomach
 - GB & CBD

The intestine

Adhesive Intestinal Obstruction



Adhesive Intestinal Obstruction

- Intestinal adhesions may cause obstruction
- Commonest cause is previous abdominal surgery
- Small intestine shows no taenia coli on its outer surface

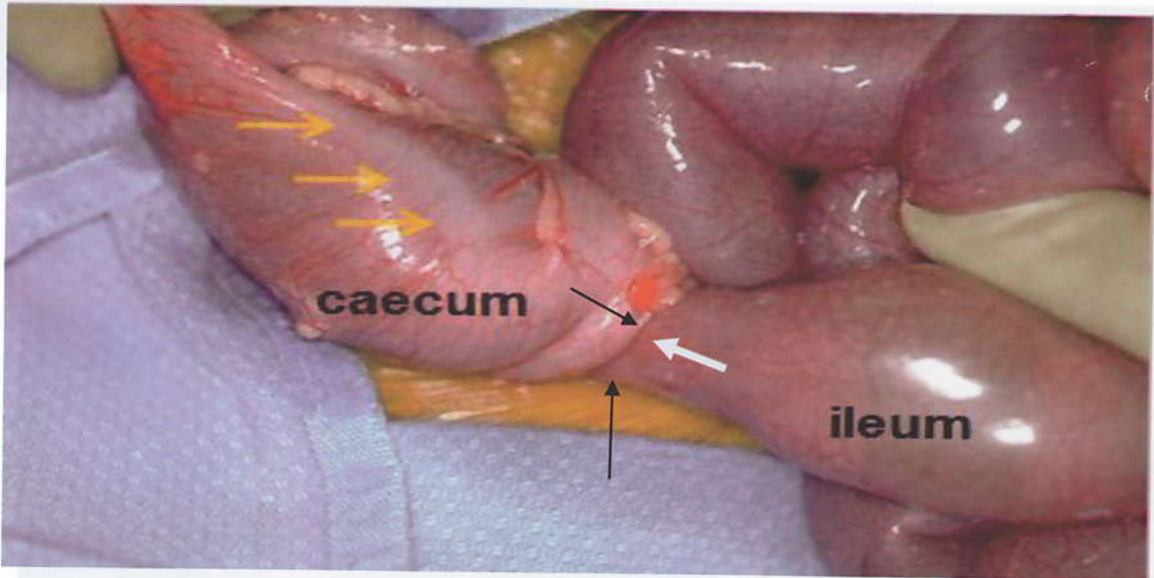
Intestinal Adhesion

- Intraoperative view. Operation for an unrelated pathology
- Adhesion band is not causing obstruction as the bowel is not distended
- The kinked loop (arrow), however, is prone to obstruction

Questions (True or false)

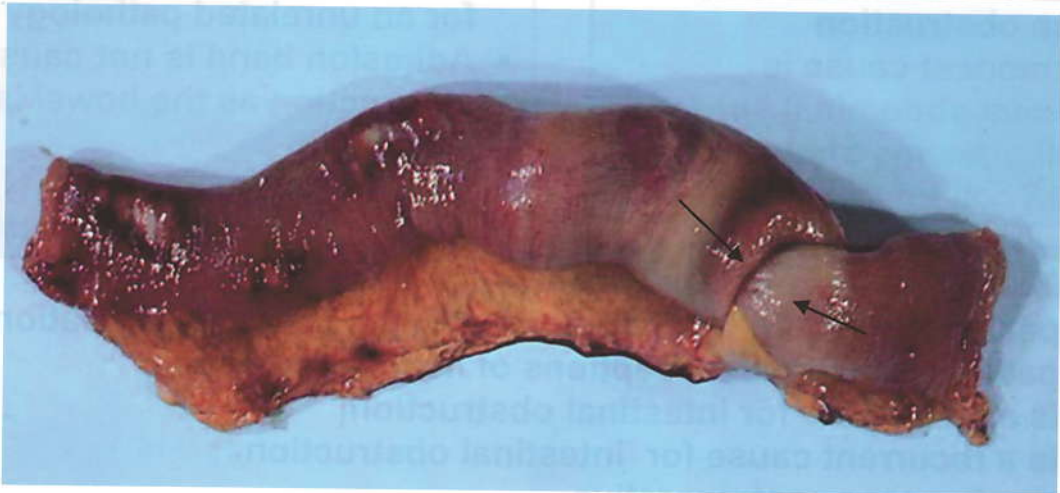
1. This patient presented by abdominal pain ,vomiting ,constipation ()
2. This pathology is intussusceptions of ileum into cecum ()
3. This is a rare cause for intestinal obstruction()
4. This is a recurrent cause for intestinal obstruction ()
5. Commonly occur post-operative ()
6. T.B peritonitis is a possible cause ()
7. Usually this patient show an abdominal scar ()
8. Presentation mainly in the 1st day after operation ()
9. Plain X-ray show multiple air fluid level ()
10. TTT is mainly surgical ()
11. There is band of fibrosis connecting loops ()
12. The shown loop is gangrenous ()

Intussusception



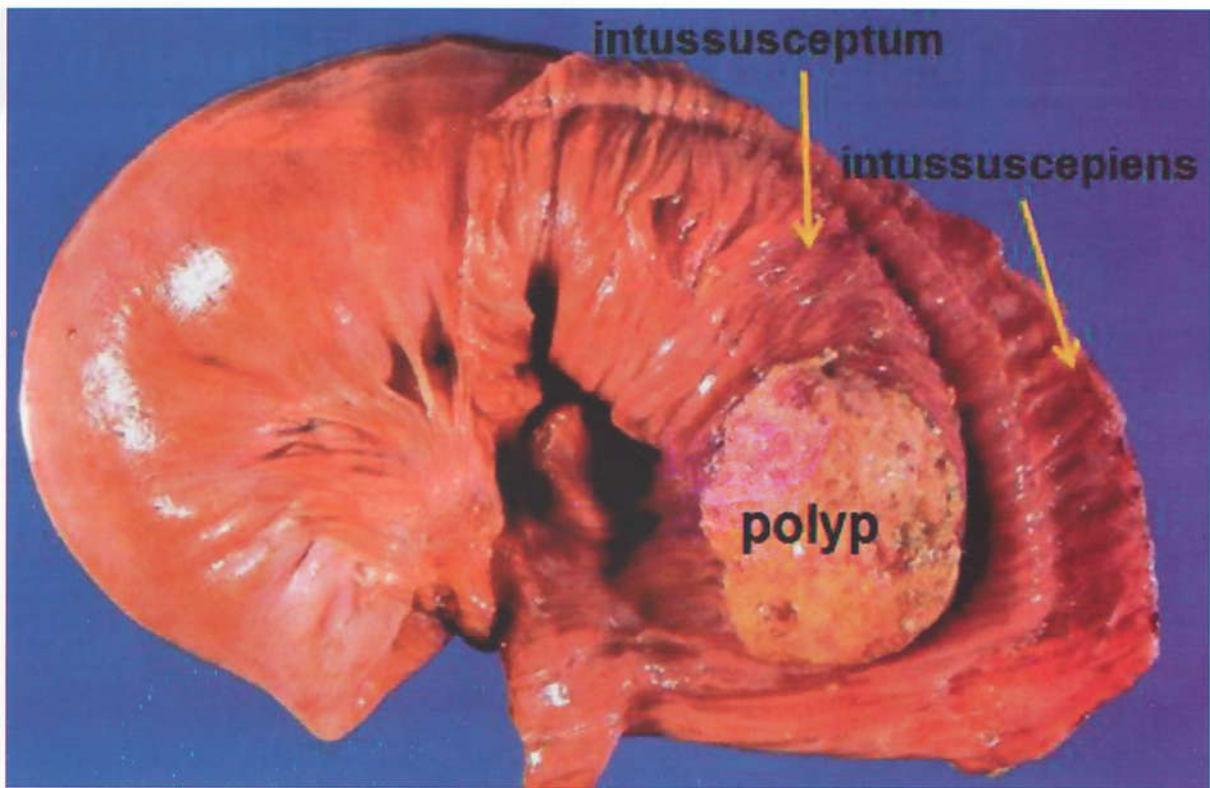
Ileo-caecal Intussusception

- Intraoperative view during abdominal exploration of an infant with acute intestinal obstruction
- It shows commonest type of intussusception (Ileo-caecal)
- The colon is distinguished by the presence of taenia coli.
- These are formed of the longitudinal muscle layer that is formed here of three bundles.



Ileo-ileal Intussusception

- Ileo-ileal intussusception is rare
- There is usually a polyp at the head of intussusception that stimulates hyperperistalsis



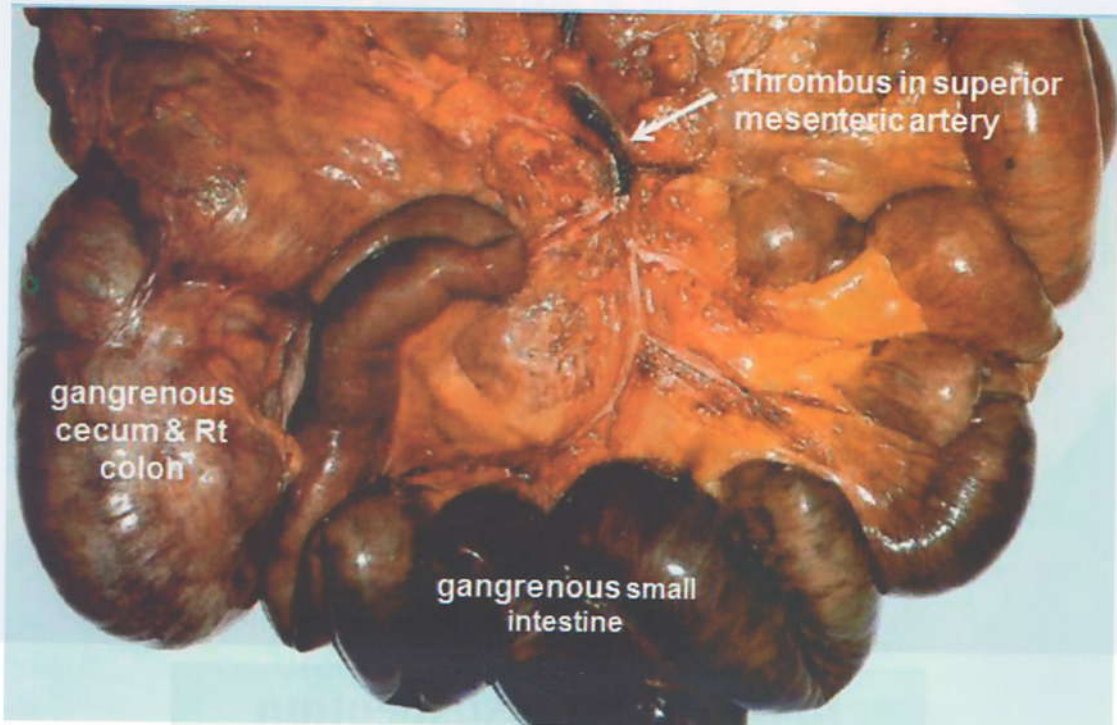
Ileo-ileal Intussusception

- The intussuscepiens is slit open to show a polyp at the tip of the intussusceptum.
- Though it does not look strangulated (no color change), this loop is excised to get rid of the polyp

Questions (True or false)

13. This pathology may occur in elderly on top cancer colon ()
14. This pathology is cause for intestinal obstruction ()
15. This picture show iliocecal volvulus ()
16. Commonest site is Ileo-ileal ()
17. Mostly caused by Meckel's diverticulum below one year ()
18. This pathology my occur in patient suffer from gastroenteritis ()
19. This patient presented by abdominal colics and vomiting ()
20. Vomiting follows the abdominal colics in most cases ()
21. May cause bleeding per rectum ()
22. Plain x-ray erect show double bauble appearance ()
23. Barium enema is diagnostic ()
24. Claw sign is diagnostic in adolescent ()
25. Early cases may be treated conservative ()

Acute Mesenteric Artery Thrombosis



Acute Mesenteric Artery Thrombosis

Questions (True or false)

- 26. Atrial fibrillation can lead to such condition ()
- 27. Low flow (hypoperfusion) can be a predisposing factor ()
- 28. This condition has a low mortality rate ()
- 29. I.V anticoagulant is the principle line of treatment ()
- 30. Abdominal tenderness and rebound tenderness can be elicited clinically ()
- 31. Short bowel syndrome is a common post-operative complication ()
- 32. Barium meal follow through is diagnostic ()



Mesenteric Injury

- Torn small intestinal mesentery may cause gangrene of the bowel because of interruption of its blood supply

Meckel's Diverticulum



Meckel's Diverticulum

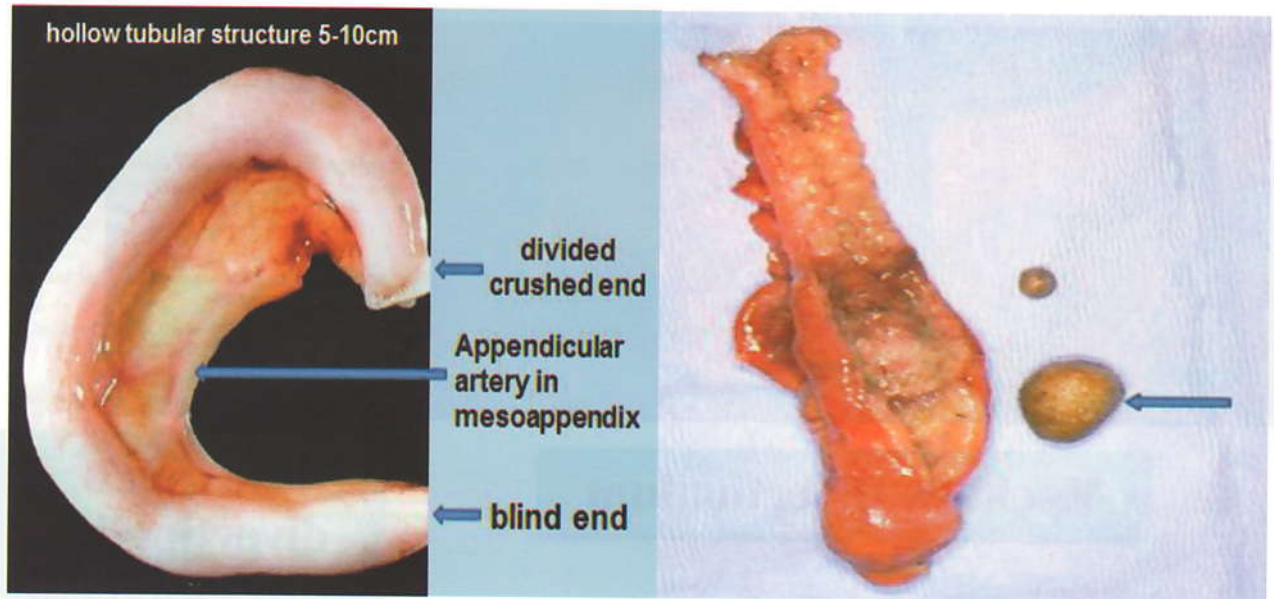
**Meckel's
diverticulitis
with gangrene
of its tip**

- It occurs in 2-3% of the population
- It is situated in the ileum 2-3 feet from the caecum
- It averages 2-3 inches in length.
- Symptoms are due to complications in 2- 3% of affected people
- Possible complications include
 1. Intestinal obstruction caused by intussusception or volvulus
 2. Incarceration in an inguinal or a femoral hernia (Littre's hernia)
 3. Peptic ulcer and bleeding per rectum
 4. Acute diverticulitis

Questions (True or false)

- | | |
|--|-----|
| 33. It is acquired diverticular disease of small intestine | () |
| 34. A cause of bleeding per rectum | () |
| 35. Commonly affect female children | () |
| 36. Commonest site is ascending colon() | () |
| 37. It is a pulsion diverticulum of colon | () |
| 38. Commonly from antimesenteric border | () |
| 39. It may be a source of recurrent peptic ulcer | () |
| 40. Diverticulitis is the commonest presentation | () |
| 41. Mostly misdiagnosed as acute appendicitis but it is less serious | () |
| 42. Perforated DU is a differential diagnosis | () |
| 43. Resection is the only treatment | () |
| 44. This is a benign colonic tumor | () |
| 45. There is reddish mucosal polyp without ulcers | () |
| 46. The tip is gangrenous | () |

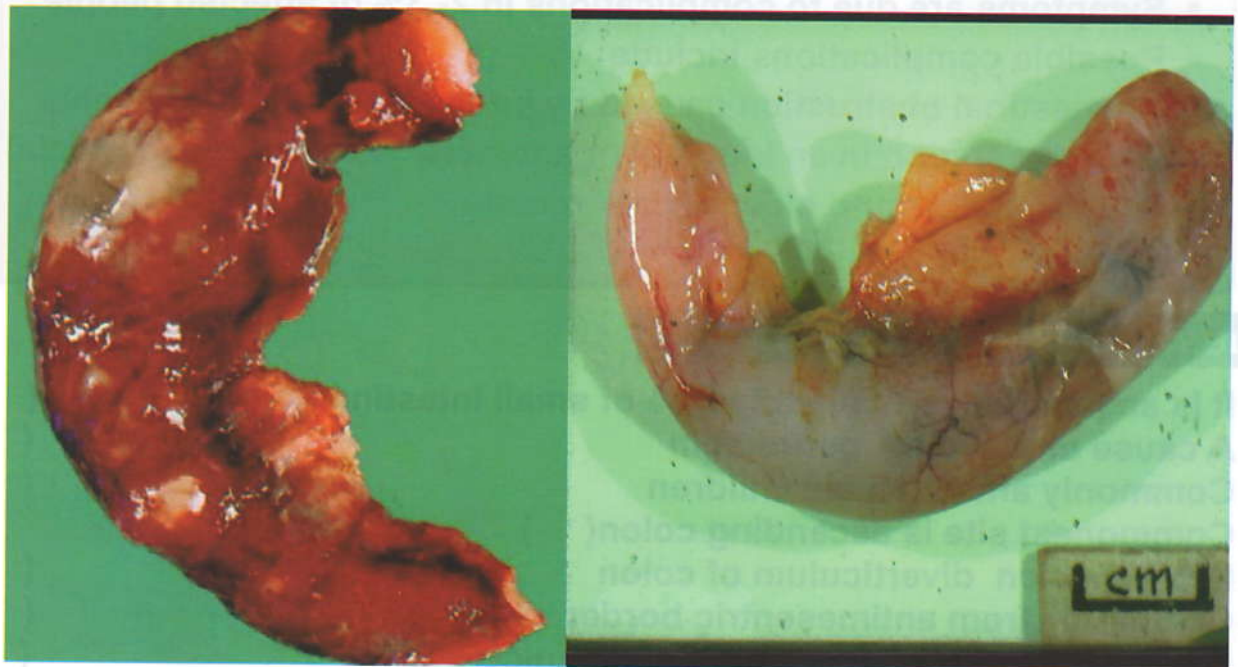
Acute Appendicitis



Normal appendix

Acute Appendicitis

- A fecolith is a stone that is formed of dried fecal matter.
- It may be the factor that starts obstructive appendicitis



Acute Appendicitis

- An acutely inflamed appendix is distended and congested.
- The mesoappendix is thickened

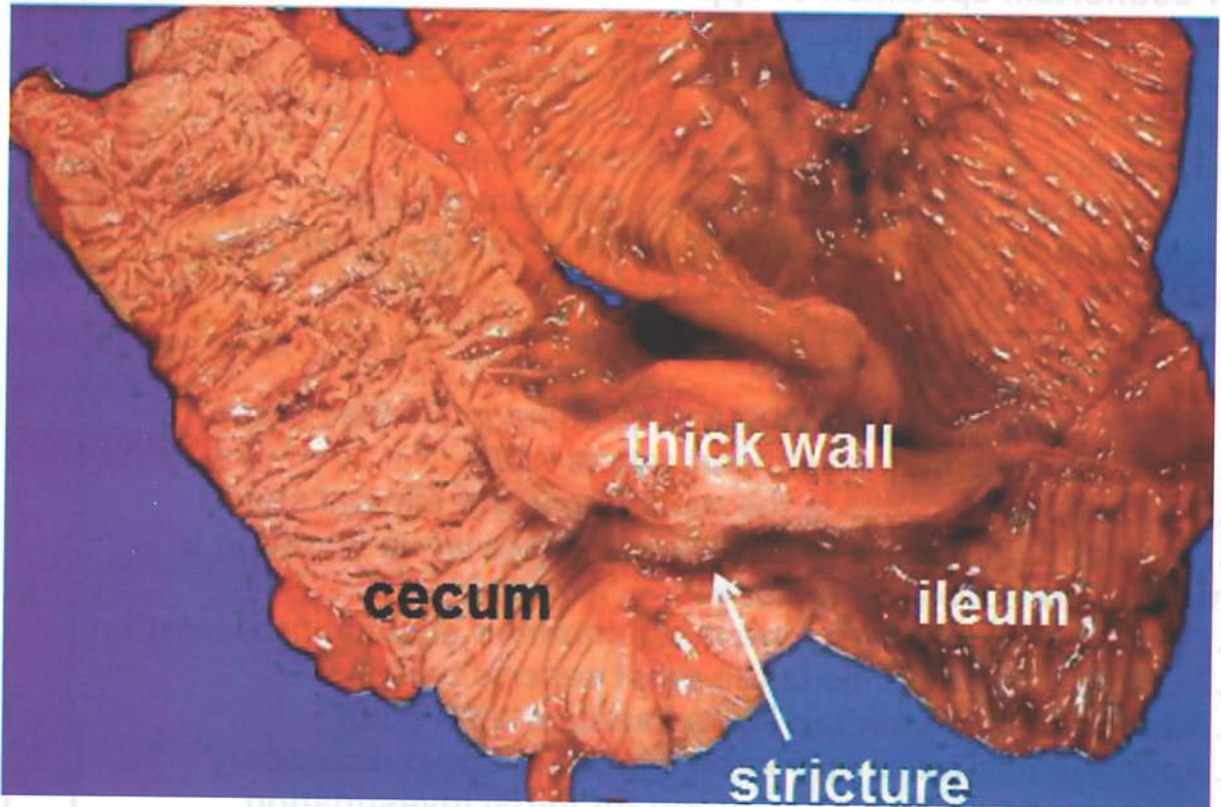
Questions (True or false)

47. Postmortem specimen of appendicitis ()
48. The tip is gangrenous ()
49. It is the classical picture of chronic appendicitis ()
50. About 1/3 of cases are obstruction in nature ()
51. Gangrene started firstly at the proximal part ()
52. Generalized peritonitis is a possible complication ()
53. It is the commonest cause for acute abdomen in old ages ()
54. Usually affect middle aged males ()
55. Mostly caused by entamoeba histolytica ()
56. Rarely affect children ()
57. Mainly presented by abdominal swelling in RT iliac fossa ()
58. Fever usually mild while heart rate is <100 ()
59. Rebound tenderness is the most important clinical sign ()
60. Fever and pain more in obstructive cases while vomiting is more in non-obstructive cases ()
61. Dysuria and dysentery are most common atypical presentation ()
62. Post ileal appendicitis is the most serious type ()
63. Appendicitis in children is less serious than adult ()
64. Appendicular mass is treated by urgent appendicectomy ()
65. Laparoscopy is the most important initial investigation ()
66. Uncomplicated cases treated by urgent appendicectomy ()
67. Appendicular abscess treated by drainage, antibiotics and no appendicectomy for 3-6 month ()
68. Acute salpingitis is the most important D.D in females ()

Questions (True or false)

69. This pathology affect only the mucosa ()
70. This disease affect only the intestine ()
71. Commonest site is terminal ileum ()
72. The affected segment become atrophied with skip lesion ()
73. Cobble stone appearance is characterized ()
74. Gall bladder stone may be a complication for this pathology ()
75. This condition may be misdiagnosed as acute appendicitis ()
76. Barium enema is diagnostic ()
77. Can complicate with fistula formation ()
78. The principle treatment is surgical removal of affected loop ()

Crohn's Disease



Crohn's Disease

- Commonest site is terminal ileum.
- Commonly causes strictures and/ or fistulas (internal & external)
- Affects any part of GIT, commonly terminal ileum
- Chronic
- Full-thickness affection
- Skip areas
- Stricture / dilatation, fistulas

Questions (True or false)

69. This pathology affect only the mucosa ()
70. This disease affect only the intestine ()
71. Commonest site is terminal ileum ()
72. The affected segmented become atrophied with skip lesion ()
73. Cobble stone appearance is characterized ()
74. Gall bladder stone may be a complication for this pathology ()
75. This condition may be misdiagnosed as acute appendicitis ()
76. Barium enema is diagnostic ()
77. Can complicate with fistula formation ()
78. The principle treatment is surgical removal of affected loop ()

Ulcerative Colitis



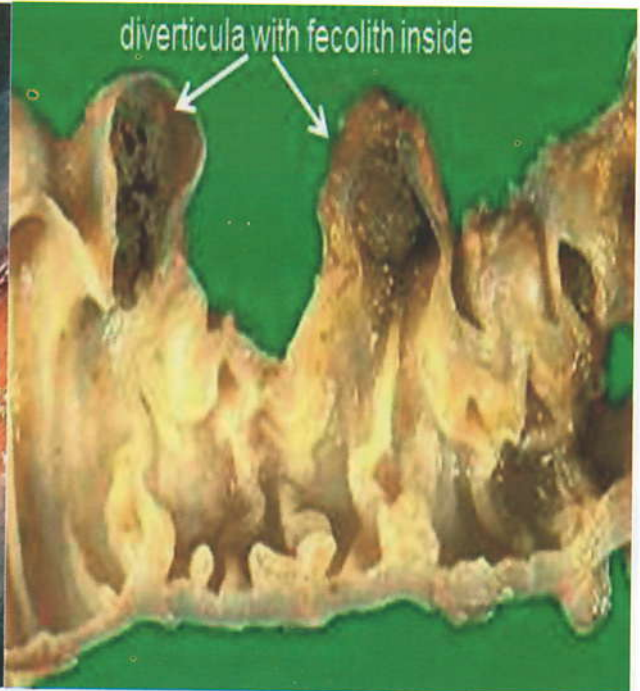
Ulcerative Colitis

- Mucosal surface of colon affected by ulcerative colitis
- Mucosa is markedly congested and shows ulcers that are here covered by blood clots
- Mucosal affection only
- Rectum is always involved
- Continuous affection. No skip areas

Questions (True or false)

79. Rectum is a common site for this pathology ()
80. The mucosa show ulceration without skip lesion ()
81. These ulcers extent deeply to reach musclosa ()
82. This pathology is benign never turn malignancy ()
83. This pathology is a cause for bleeding per rectum ()
84. Constipation is a common presentation ()
85. More common in females ()
86. Biopsy via colonoscopy is the best method for diagnosis ()
87. Standard ttt is pan-procto-colectomy ()

Colonic Diverticula



Colonic Diverticula

- Pulsion diverticula
- Formed of mucosa
- Narrow neck
- Multiple
- More in sigmoid and left colon
- Related to chronic constipation
- Not precancerous
- May cause bleeding, diverticulitis, stricture or colo-vesical fistula

Questions (True or false)

88. This pathology is a result of chronic heavy diarrhea ()
89. It is acquired true diverticular disease ()
90. Commonly affect sigmoid colon ()
91. Rectum is the 2nd common site after sigmoid colon ()
92. The most common presentation is abdominal pain, tenderness ()
93. It is a common cause for bleeding per rectum ()
94. Barium enema is diagnostic ()
95. Best investigation in acute diverticulitis is CT ()
96. Ttt is essentially surgical ()
97. Acute diverticulitis best treated surgically ()
98. There are multiple colonic polyps on both borders ()
99. This is a postmortem jejunal segment ()

Colonic Polyps

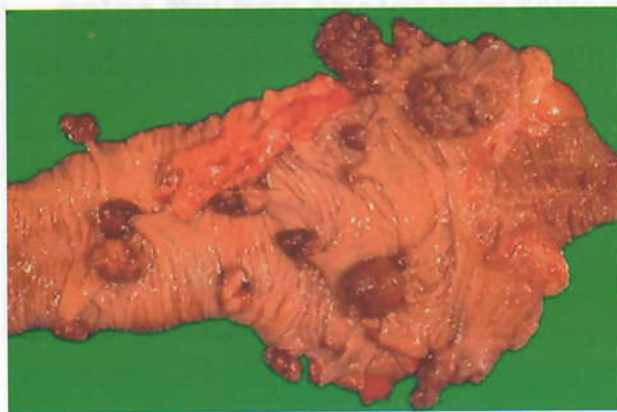


Pedunculated polyp



Sessile polyp

- The term polyp is a morphological description.
- It does not signify any pathological diagnosis
- Colon polyps may be neoplastic (benign or malignant), inflammatory or hamartomatous



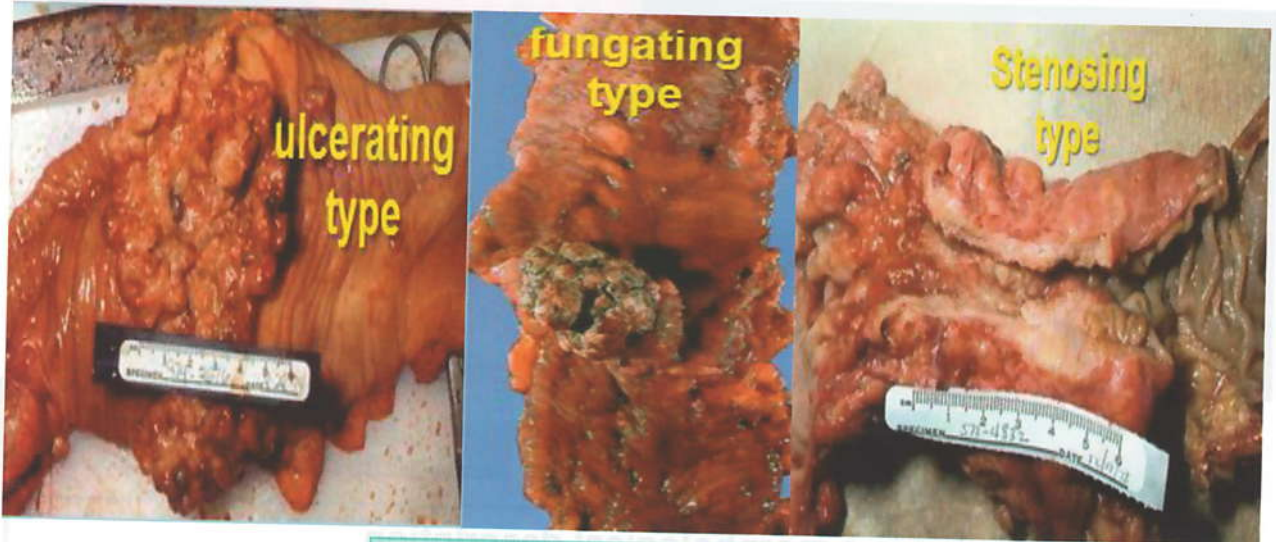
Multiple colon polyps

- Adenomatous polyposis coli
- Hereditary disease
- Left untreated, malignant transformation occurs in 100% of cases

Questions (True or false)

100. The lesion in the 1st pic is pedunculated ()
101. The lesion in the 2nd pic is sessile ()
102. The lesions in the 3rd pic are multiple and variable in size ()
103. The underlying cause is mostly Adenomatous polyposis coli ()
104. If left untreated can turn malignant in 100% of cases ()
105. Colonoscopy is the investigation of choice ()
106. In small intestine it could be Peutz-Jeguer syndrome ()
107. Gardner's syndrome is an association ()
108. Removal of the polyps and follow up is the best treatment ()
109. Procto-colectomy is only reserved for complicated cases ()

Colon Cancer



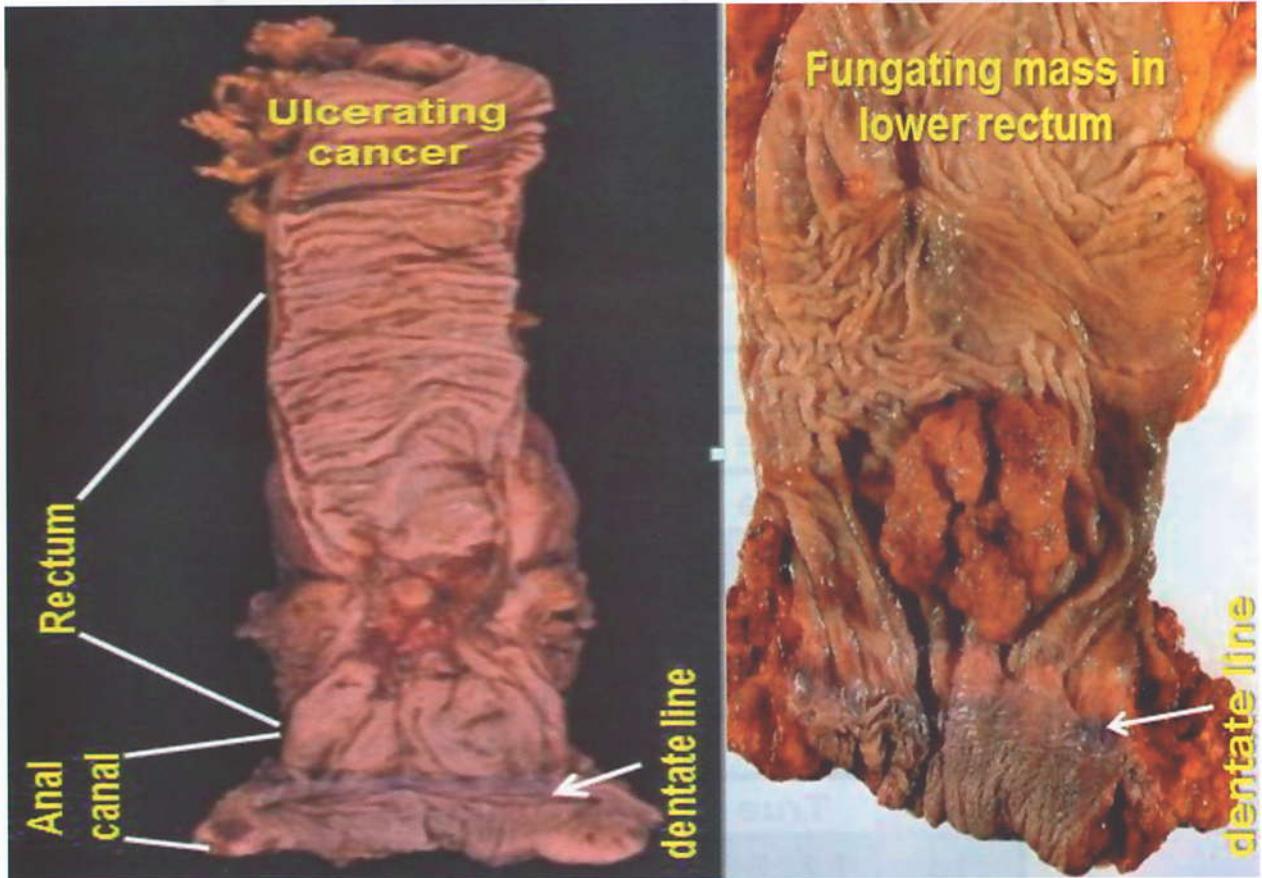
Colon Cancer

- Adenocarcinoma
- Spreads locally, by blood to liver and by lymphatics upwards to mesenteric nodes; Rt colon to superior mesenteric and left colon to inferior mesenteric nodes. May also produce peritoneal nodules
- Commonest site of affection is the recto-sigmoid junction
- Left colon cancer tends to cause obstruction because
 - ✓ It is usually stenosing
 - ✓ Lumen is smaller than that of right size
 - ✓ Fecal material is thicker

Questions (True or false)

110. This is a picture of malignant ulcer ()
111. Constipation is a predisposing factor ()
112. This pathology may occur on top of familial polyposis coli ()
113. Commonly affect the cecum ()
114. Liver metastasis rarely occur in that pathology ()
115. IO is a possible complication especially on RT colon ()
116. Can cause bleeding per rectum ()
117. On Rt colonic affection dyspepsia is the commonest presentation ()
118. On Lt colonic affection constipation is commonest presentation ()
119. Sigmoidoscopy is best method for screening ()
120. Barium enema show characteristic appearance ()
121. Carino-embryonic antigen may be used for follow up ()
122. Operable cases treated by radical resection ()
123. Inoperable cases treated by palliative radiotherapy ()

Rectal Cancer



Rectal Cancer

- Rectal cancer pathology is similar to that of the colon
- If it spreads below the dentate line spread can occur to the inguinal lymph nodes
- This can be an operative specimen as the treatment of low rectal cancer is abdominoperineal resection

Questions (True or false)

- | | |
|---|-----|
| 124. If lesion is below dentate line it can spread to inguinal LN | () |
| 125. In males can spread early to the prostate | () |
| 126. Obstructed cases can be treated with proximal colostomy | () |
| 127. Ulcerative colitis is a risk factor | () |
| 128. Can send early secondaries to the liver | () |
| 129. Can present with secondary piles | () |
| 130. Above dentate line it can spread to inferior mesenteric LN | () |

Intestine Key answer

1	True
2	FALSE
3	FALSE
4	True
5	True
6	True
7	True
8	True
9	True
10	FALSE
11	True
12	FALSE
13	True
14	True
15	FALSE
16	FALSE
17	FALSE
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20	True
21	True
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111	True
112	True
113	FALSE
114	FALSE
115	FALSE
116	True
117	FALSE
118	True
119	True
120	True

121	True
122	True
123	FALSE
124	True
125	True
126	True
127	True
128	True
129	True
130	True

Important points & tweets based on our questions

- Q3 :** Intraperitoneal adhesions are the commonest cause for intestinal obstruction.
- Q5 :** postoperative adhesions are commonest cause of adhesive intestinal obstruction.
- Q10:** surgery needed if conservative ttt fails, or if strangulation or gangrene .
- Q16:** Ileo caecal is the commonest & usually affects infants.
- Q17:** Idiopathic may be adenovirus cause swelling of lymphoid follicles, protrude to lumen act like FB, peak incidence in summer due to gastroenteritis.
- Q19:** VOMITING follows colics in 85% of cases.
- Q21:** infant passes mucous & blood per rectum (red currant jelly).
- Q23:** Ba meal shows Claw sign in infantile ileocaecal intussusception.
- Q28:** MVT has mortality rate 30% , while Mesenteric arterial occlusion 45%, embolism has better prognosis than arterial thrombosis
- Q30:** in early stages ..little physical signs to match pain severity, then with development of hypovolemia & peritonitis, signs can be detected.
- Q31:** up to 70% of small intestine can be resected without major nutritional effect , if longer segment removed malabsorption occurs (short bowel syndrome).
- Q34:** Meckel's diverticulum is the commonest cause of lower GIT bleeding in children.
- Q37 :** Meckel's diverticulum is congenital true diverticulum from all layers of bowel wall , lies on antimesenteric border , with separate blood supply from superior mes. Artery.
- Q 43:** should be resected if symptomatic, or accidentally discovered in child or adult with attached band .

- Q 50:** 2/3 of cases appendicitis is due to obstruction either by fecolith or lymphoid tissue swelling due to viral infection
- Q 53:** APPENDICITIS is most prevalent in 2nd & 3rd decades, then risk ↓ with age bec, lumen is almost obliterated & lymphoid tissues are little also ↓ in children → wide lumen & well drained .
- Q 63:** Appendicitis is more serious in children & youngs <3 yrs, 80% will have perforated appendix.
- Q76 :** Ba meal & follow through & enema .. shows segmental areas of stricture , separated by free areas of free bowel , cobble stone appearance of mucosa by longitudinal fissures , also string sign of Kantor.
- Q79:** Ulcerative colitis begins at dentate line of anal canal & extends proximally either proctitis (rectum) or pancolitis (rectum & whole colon)
- Q 82:** cancer colon risk higher in patients with pan colitis for >10 years & often multicentric.
- Q84:** Diarrhoea mixed with blood , pus & mucus with tenesmus
- Q90:** Colonic diverticular disease is acquired pulsion diverticula through the circular muscle layer at points of entry of bl. Vs between taenia coli , any area of colon can be affected, (sigmoid is the commonest),(rectum never affected).
- Q93:** BPR may be 1st presentation of the disease , (diverticular disease, cancer colon & angio dysplasia are commonest causes of) BPR
- Q112:** FBC & Gardenar syndrome has 100% risk to develop cancer colon . especially if large adenoma >2cm , of villous type.
- Q113 :** Caecum affected in 10% of cases, 2/3 of cases in rectum & sigmoid colon
- Q114:** blood spread causes liver metastases in 20% of cases.
- Q120:** Ba enema tumor appears as fixed irregular filling defect , annular stricture on left side shows APPLE CORE appearance, also useful to exclude a 2nd higher tumor.
- Q123 :** Inoperable cases treated by palliative resection.

-5-

Orthopedic Jars

Malunited Fracture

- Malunited fracture of shaft of femur
- Angulation is shown here by the dashed blue line
- There is also marked lateral displacement
- The bones that form the ends of fractured bone

Questions (True or false)

1. This is pathological fracture
2. Corrective osteotomy and internal fixation is required
3. There is evidence of chronic osteomyelitis is seen in this specimen
4. The degree of angulation is acceptable in weight bearing
5. Skin traction over Thomas splint is ideal treatment of this condition

Malunited Fracture



Malunited Fracture

- Malunited fracture of shaft of femur
- Angulation is shown here by the dashed blue line
- There is also marked lateral displacement
- The tissue that binds the two sides of fractured bone is called callus

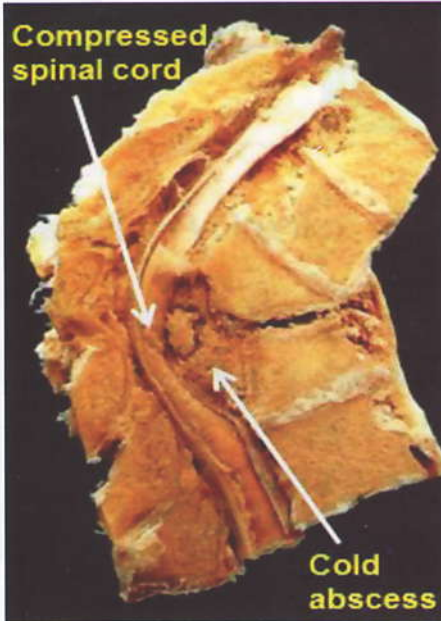
Questions (True or false)

1. This is pathological fracture ()
2. Corrective osteotomy and internal fixation is required ()
3. There is evidence of chronic osteomyelitis is seen in this specimen ()
4. The degree of angulation is acceptable in weight bearing ()
5. Skin traction over Thomas splint is ideal treatment of this condition ()

Pott's disease of Spine



- Secondary tuberculosis
- Affects children
- Reaches spine by blood route
- Commonly affects lower thoracic spine
- Affects 2 or 3 adjacent vertebrae and the discs in between
- Tuberculosis causes bone destruction without new bone formation



- The triad of Pott's disease of the spine
 1. kyphosis
 2. cold abscess
 3. paraplegia (10% of cases)
- This can never be a surgical specimen. It must be a postmortem one

Questions (True or false)

6. This is a premortem specimen ()
7. There is destruction of the adjacent 2 vertebrae ()
8. This is a metastatic vertebral bone disease ()
9. Usually affect upper thoracic and lower cervical region ()
10. Intervertebral disc usually spared in this pathology ()
11. Spinal cord affection may occur leading to paralysis ()
12. More common in children ()
13. Back pain is the usual first presentation ()
14. Lordosis is the commonest skeletal complication ()
15. There is extensive bone reformation ()
16. Treatment is mainly surgical ()

Giant Cell Tumour



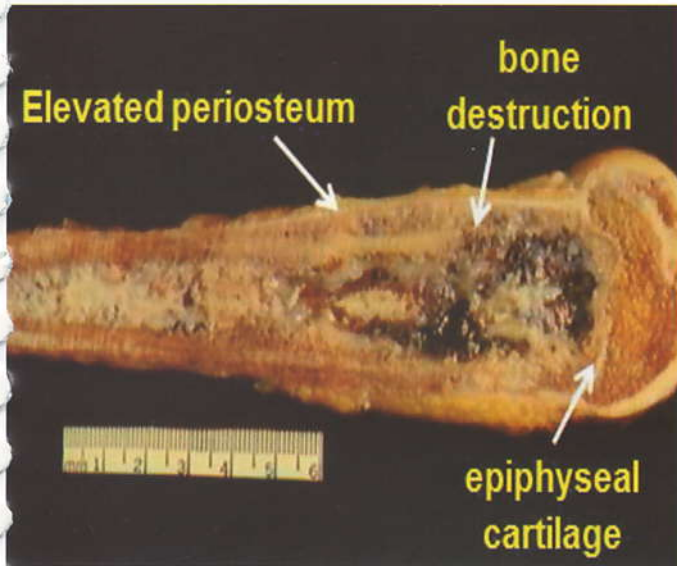
Giant Cell Tumour

- Also known as osteoclastoma
- Different grades of aggression, from totally benign to frankly malignant
- Affects young adults 20-40 y
- Starts in epiphysis
- Here the lower end of femur is destroyed by a reddish brown expanding lesion that shows loculations.
- The lesion is well demarcated from the rest of femur upward and it does not invade the articular cartilage downwards

Questions (True or false)

17. This is an osteosarcoma ()
18. Cortex is heavily destroyed while cartilage is spared ()
19. Commonly occur around elbow joint ()
20. Usually affect adolescent males ()
21. This is a picture of aggressive truly malignant bony mass ()
22. Medulla not infiltrated by this mass ()
23. Pain is an early presentation ()
24. Pathological fracture may occur early ()
25. Egg-shell crackling sensation on palpation ()
26. X-ray show sun ray appearance and Codman triangle ()
27. Early lung metastasis may occur ()
28. Treatment is mainly by radiotherapy ()

Osteosarcoma



- The lower end of femur of a child as evidenced by presence of epiphyseal cartilage
- Tumour arises from metaphysis
- Though commonest between 10-20 y, much less commonly it affects elderly people who have Paget's disease of bone

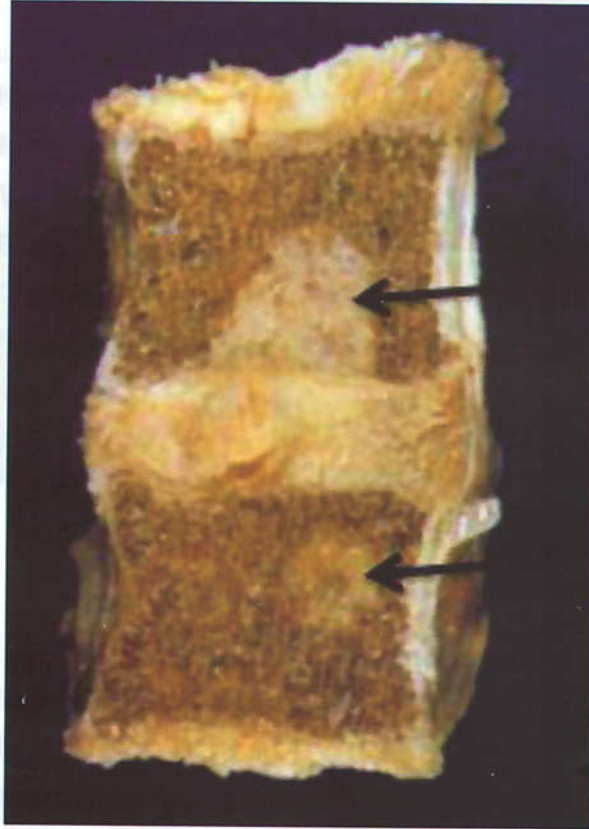


- A highly malignant tumour
- It invades surrounding tissues and spreads by lymphatics and blood, usually to lungs
- There are four main pathological features.
 1. Bone destruction
 2. Tumour bone formation (radiologically appears as sun-ray appearance)
 3. Reactive bone formation (radiologically appears as Codman's triangle)
 4. Soft tissue infiltration

Questions (True or false)

29. This is osteosarcoma of the femur ()
30. Arises from epiphysis of long bone ()
31. There is whitish mass with areas of hge and necrosis ()
32. 80% of cases affect upper end femur ()
33. It is the commonest 1ry malignant bone tumor in adult ()
34. Articular surface and medulla are heavily infiltrated ()
35. 4th decade of life is the main age ()
36. There is reactive bone formation ()
37. Pain is late while fracture is early ()
38. Egg shell crackling on palpation ()
39. Soap bubble appearance on x-ray ()
40. Chemotherapy is the treatment of choice ()

Bone metastases



Bone metastases

- This is a postmortem picture of vertebrae of a patient who had advanced breast cancer
- Bone metastases form the commonest bone malignancy
- Affect red bone marrow, e.g., vertebrae, ribs, sternum, skull, proximal femur and proximal humerus
- Bone secondaries usually destroy bones (osteolytic). Sometimes, particularly with prostate cancer they may be bone-forming (osteosclerotic)

Questions (True or false)

41. This is a post mortem vertebral bone specimen ()
42. There are multiple yellowish nodules in the vertebral bodies ()
43. This is 2ry vertebral bone tumor ()
44. Usually destroys the intervertebral discs being highly vascular ()
45. It may cause spinal cord affection ()
46. Prostate, breast are rare sites for primaries ()
47. Mainly spread to bone by lymphatics ()
48. Back pain is the earliest presentation ()
49. Treatment is essentially surgical ()

Orthopedic Key answer

1	FALSE
2	True
3	FALSE
4	FALSE
5	FALSE
6	FALSE
7	True
8	FALSE
9	FALSE
10	FALSE
11	True
12	True
13	True
14	FALSE
15	FALSE
16	FALSE
17	FALSE
18	TRUE
19	FALSE
20	FALSE
21	FALSE
22	FALSE
23	True
24	FALSE
25	True
26	FALSE
27	FALSE
28	FALSE
29	True
30	FALSE

31	True
32	FALSE
33	True
34	FALSE
35	FALSE
36	True
37	FALSE
38	FALSE
39	FALSE
40	FALSE
41	True
42	True
43	True
44	FALSE
45	True
46	FALSE
47	FALSE
48	FALSE
49	FALSE

Important points & tweets based on our questions

- Q9:** commonest joints to be affected by TB: spine(Lower thoracic & upper lumbar) & hip joints.
- Q10:** TB affects 2 or 3 adjacent vertebrae & destroys the intervertebral disc. paraplegia in 10% of cases.
- Q13:** Pott's is more in children <5 years (75% below 10 years). Bad prognosis in adults.
- Q14:** Pott's causes angular Kyphosis called Gibbus.
- Q18:** extend to subarticular but usually does not affect articular cartilage
- Q19:** Common sites of osteoclastoma : around knee & away from elbow
- Q26:** X-ray shows radiolucent areas , forming soap bubble appearance & medullary plug (operculum) at the junction of the shaft & tumor.
- Q32:** 80% of osteosarcoma occur in teenagers, 80% in lower limb , 80% in end of femur, 80% in metaphysis.
- Q34:** Osteosarcoma rapidly infiltrates the medulla towards the shaft but respects the epiphyseal cartilage so doesn't invade the joint .
- Q37:** Pain usually is the 1st symptom , worse at night & ↑ gradually by time
Fracture is rare because Pt is bedridden due to pain.
- Q46:** commonest sources are breast, prostate, kidney, lung, thyroid & adrenal neuroblastoma, in 10% 1st site is unknown.

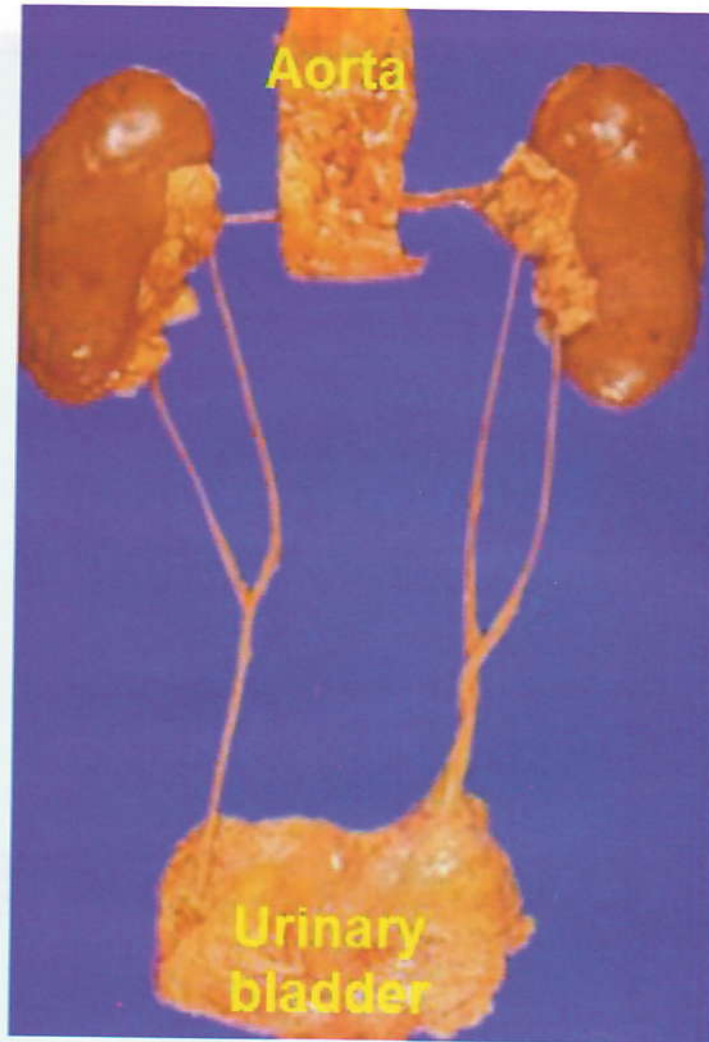
-6-

Urosurgery Jars

Questions (True or false)

1. The underlying cause is congenital
2. Commonly associated with polycystic kidney
3. The principle treatment is surgical removal of accessory ureter
4. In female can present with dropping of urine
5. Can complicate with hydronephrosis
6. Anomalies of the renal artery are a common association

Double Ureter

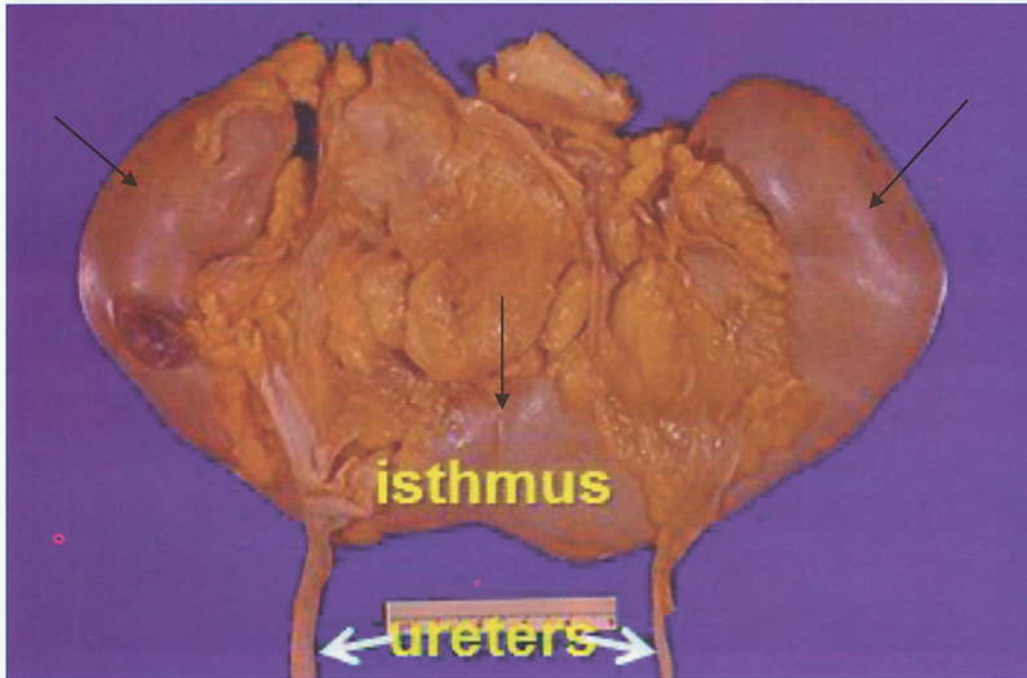


Double Ureter

Questions (True or false)

1. The underlying cause is congenital
2. Commonly associated with polycystic kidney
3. The principle treatment is surgical removal of accessory ureter
4. In female can present with dripping of urine
5. Can complicate with hydronephrosis
6. Anomalies of the renal artery are a common association of this condition

Horseshoe Kidney



Horseshoe Kidney

- Both kidneys are fused at their lower poles
- Ascent of kidneys is arrested by the isthmus trapped by the inferior mesenteric artery
- Normal kidney rotation is not completed
- Prone to disease because ureteral obstruction may result from angulation of the ureter as it crosses renal isthmus. Stasis favours infection and stone formation

Questions (True or false)

7. Fusion of upper pole is more than lower pole
8. The renal pelvis directed backward and medially
9. The artery on the isthmus is superior mesenteric artery
10. About 1/3 of cases are asymptomatic
11. Stones and infection rarely occur
12. IVP is diagnostic
13. In IVP the upper poles are nearer to midline than lower poles
14. Treatment is by dividing the isthmus is a must once the diagnosis stabilized

Polycystic Kidney



Polycystic Kidney

- Autosomal dominant
- Bilateral
- Progressive
- Multiple cysts that destroy renal parenchyma
- The cut section shows that the cystic cavities do not communicate with each other or with the pevicalyceal system. This is different from the cavities of hydronephrosis
- Produces renal hypertension and renal failure

Questions (True or false)

15. This is a shrunken kidney with multiple cysts
16. Renal parenchyma is atrophied
17. This is acquired bilateral cystic disease
18. May be associated with cysts in other organs
19. In most cases these cysts are connected to renal pelvis
20. The prognosis of infantile type is much more better than adult type
21. In adult type the symptoms start by age of 5
22. By the age of 10 years the patient is totally free with normal renal histology
23. Main symptom is haematuria
24. Renal failure start by the age of 30
25. Patient may be presented with HTN resistant to ttt
26. Hypernephroma is a possible differential diagnosis
27. I V P the investigation of choice
28. Aspiration of the large cyst that compress the ureter my occur
29. Treatment is essentially surgical by total nephrectomy

Simple Solitary Renal Cyst



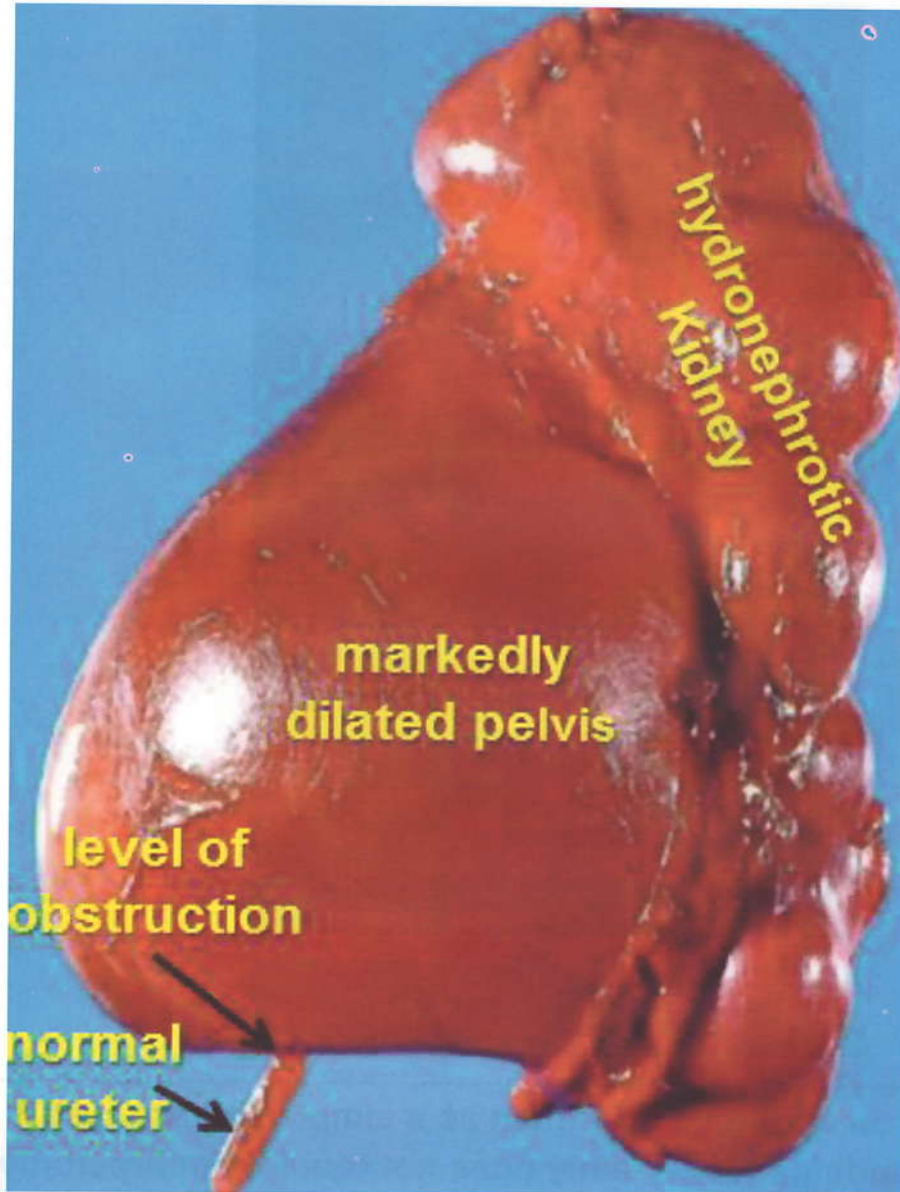
Solitary Renal Cyst

- This is not an operative specimen as a simple solitary cyst is a harmless finding that certainly does not require nephrectomy.
- It should, therefore, be a postmortem specimen

Questions (True or false)

30. Cyst may or may not connected to renal pelvis according to its etiology
31. This cyst may show hydrocalycosis
32. This cyst may cause hydronephrosis if ureteric compression occur
33. Renal tissue surrounding this cyst is not compressed
34. Commonly asymptomatic
35. US IS less helpful than renal angiography
36. This cyst contain teeth ,bone, hair
37. I V P differentiate this cyst from a neoplastic renal mass
38. This cyst may cause hydronephrosis
39. Ttt is essentially surgical by total nephrectomy

Pelvi-ureteric Junction Obstruction



Pelvi-ureteric Junction Obstruction

Questions (True or false)

40. This picture show an enlarged kidney
41. There is hydronephrosis ,hydroureter
42. This is a common cause for hydronephrosis in children
43. The most frequent finding in children is abdominal mass
44. Loin pain is a common symptom specially after fluid intake
45. Renal parenchyma not atrophied
46. Ureteric stones are common in this pathology
47. IVU show dilated pelvicalyceal system with normal ureteric caliber
48. Pyloroplasty is the operation of choice

Renal Tuberculosis



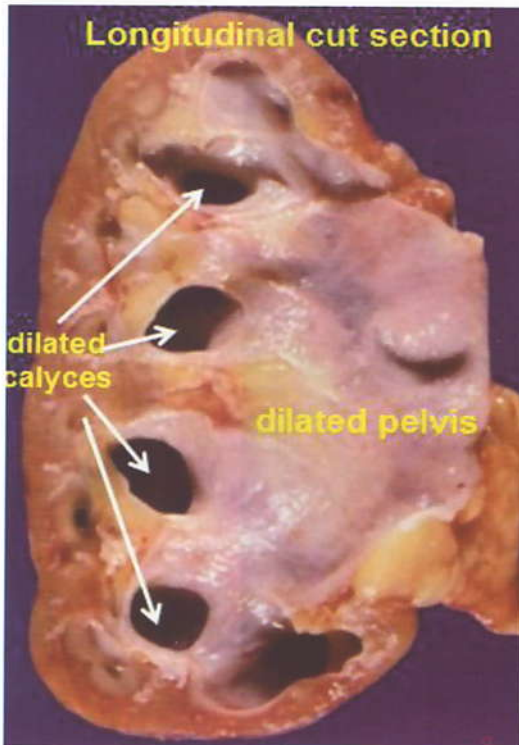
Renal Tuberculosis

- The kidney is opened longitudinally along its convex border
- Renal parenchyma shows multiple cavities that are filled with caseous material
- The ureter is also affected
- This is secondary TB
- Bacteria reach kidney by blood stream

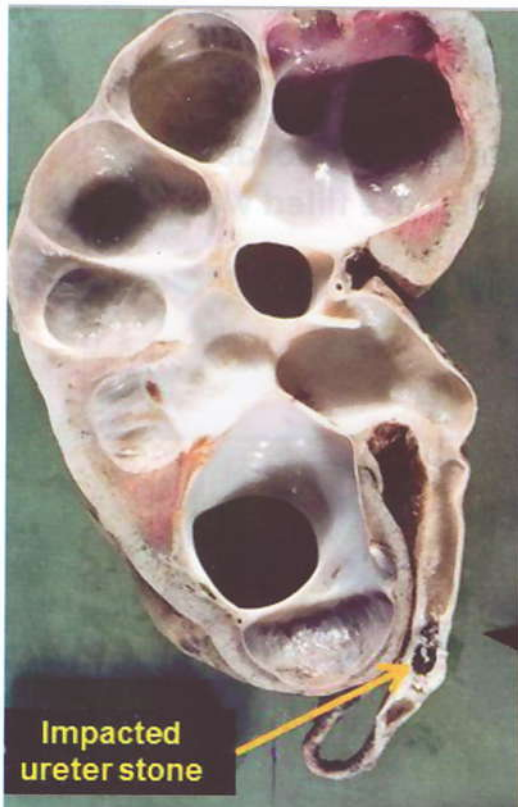
Questions (True or false)

49. This is picture of an enlarged kidney.
50. Renal parenchyma show fibrosis and calcification
51. This cut section show multiple white hard stone
52. TB bacilli reach kidney mainly transcelomic
53. This lesion particularly affect renal tissue sparing ureter ,UB
54. This patient may have extra renal manifestation
55. Frequency is a late symptom on advanced cases
56. Loin pain is the main symptom
57. CBC of this patient may show leucopenia ,anemia, elevated ESR
58. This patient may have genital problems
59. Urine culture show more than 100 gram –ve bacilli /HPF
60. Treatment is essentially surgical with no role of drugs

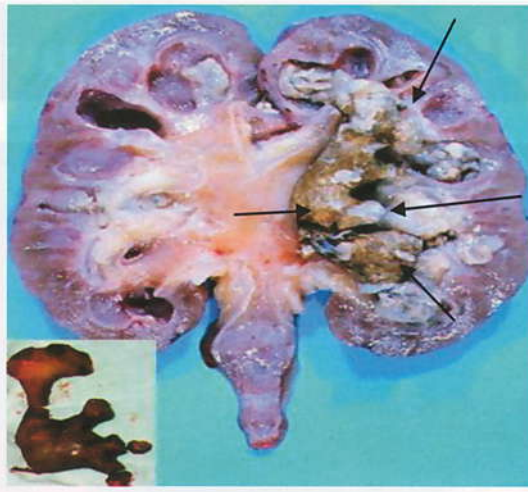
Hydronephrosis



- The dilated calyces communicate with the renal pelvis (unlike polycystic kidney)
- The renal parenchyma is thinned out but it still retain some thickness



- Cut section of the kidney
- The calyces, pelvis and ureter above the stone are dilated
- The renal parenchyma is thinned out. In this case the change is marked in the upper half of the kidney
- Ureter obstruction
 - ✚ Impairs function of ipsilateral kidney
 - ✚ Predisposes to infection (pyelonephritis)



- The pelvis is filled with a stone that is extending inside calyces
- This is called a staghorn stone and is a phosphate stone
- It forms a cast of the pelvicalyceal system

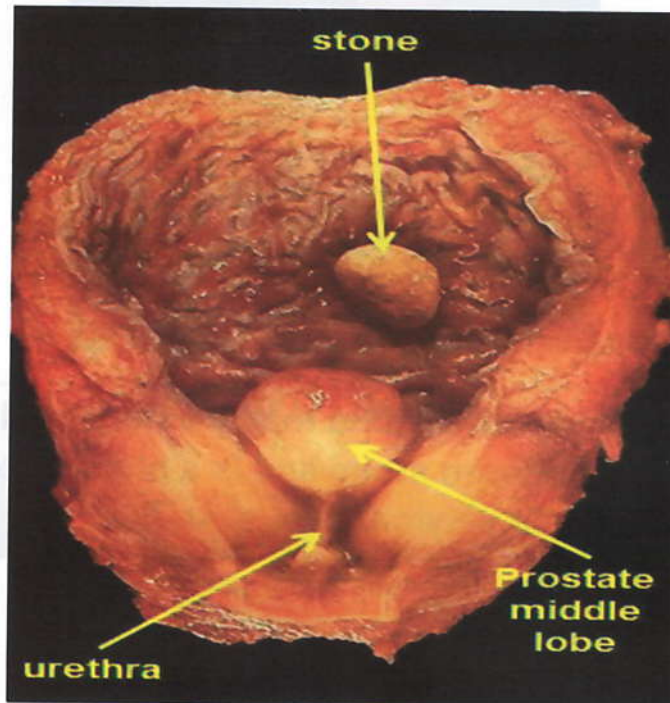


Renal pelvis stone

Questions (True or false)

61. There is hydronephrosis, hydroureter
62. These dilated calyces not connected to renal pelvis
63. This is a hereditary renal pathology essentially occur in males
64. Pelviureteric junction obstruction is the cause in this case
65. Stones are the commonest cause for bilateral affection
66. Renal parenchyma not atrophied
67. Dull aching pain is the main symptom which increase on drinking excessive fluids
68. Resistant HTN is a possible complication
69. R.C.C is a possible clinical differential diagnosis
70. US is the investigation of choice to diagnose this pathology
71. Kidney function tests are elevated.
72. Treatment of the cause is a must.

Benign Prostatic Hyperplasia



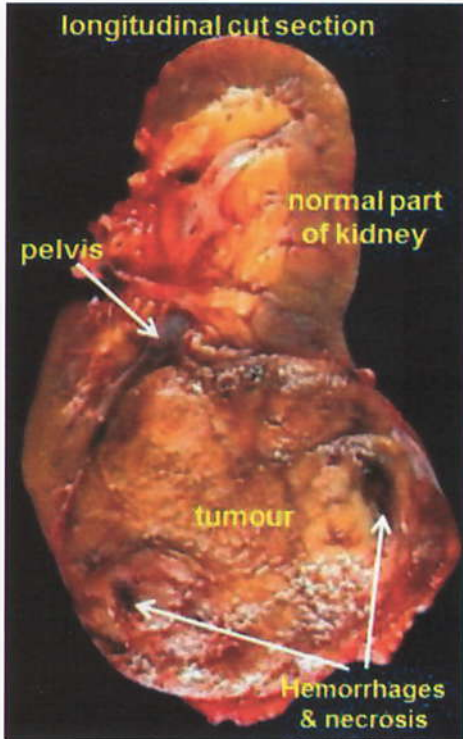
Benign Prostatic Hyperplasia

- The urinary bladder and posterior urethra are opened longitudinally to show an enlarged middle lobe of the prostate and a bladder stone
- The middle lobe projects in the bladder and obstructs its outlet. Obstruction is evidenced by trabeculations of the bladder wall

Questions (True or false)

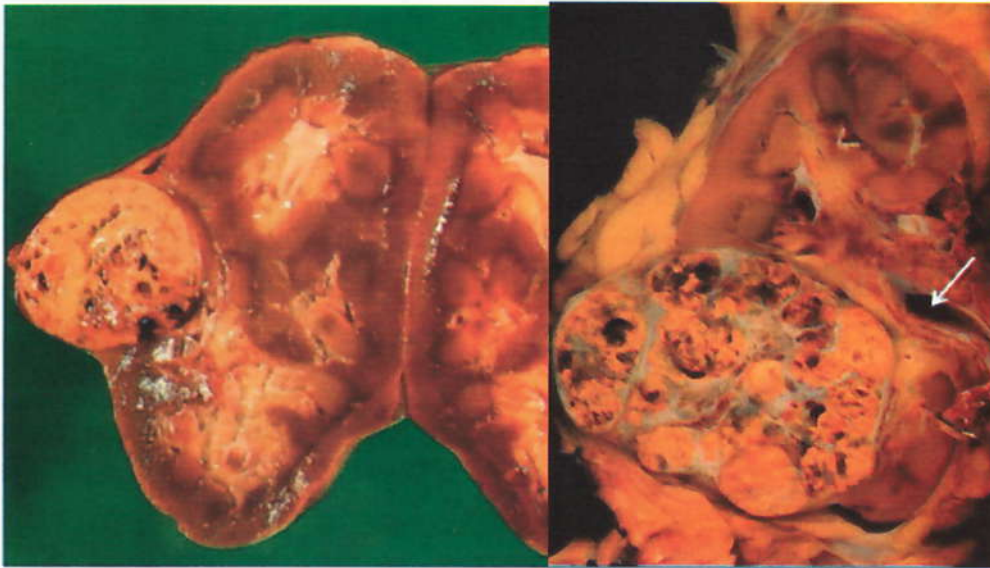
73. There is a malignant mass in the urinary bladder trigon
74. The bladder is dilated and show trabeculations
75. The bladder neck is narrowed by a prostatic mass
76. This is a picture of benign prostatic hyperplasia
77. This lesion is precancerous above the age of 60
78. Pelvic pain is the usual 1st presentation
79. Frequency of micturition occurs late
80. By DRE the rectal mucosa is mobile on prostate
81. The urethra is elongated and at higher position
82. Urine retention may be the 1st presentation
83. Abdominal US is the investigation of choice
84. Alkaline phosphatase is a marker for this pathology
85. Bilateral hydronephrosis is a possible complication
86. Treatment is mainly surgical
87. Asymptomatic cases treated by 5 alpha reductase inhibitor

Renal Cell Carcinoma



Hypernephroma

- Adenocarcinoma of renal tubules
- Golden-yellow colour is due to its high lipid content
- There is an apparent false capsule surrounding tumour but it actually invades the adjacent tissues
- The tumour infiltrates the renal pelvis and the renal vein



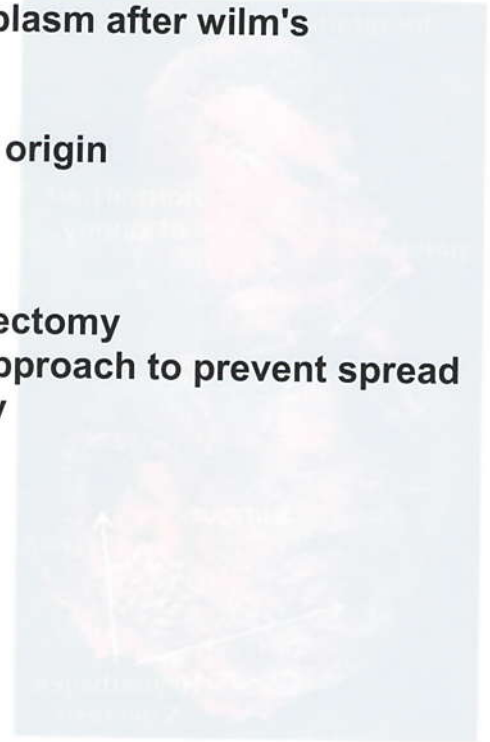
- The tumour looks as if it were well-encapsulated but it is actually invasive without a capsule
- it shows areas of hemorrhage
- Modes of spread are direct, lymphatic and by blood stream (mainly to lungs and bones)

- Pelvis of kidney (arrow) is compressed by the tumour but is also microscopically invaded.
- This is the cause of haematuria
- The kidney is removed with the surrounding fat and lymph nodes in order to achieve a radical excision

Questions (True or false)

88. There is a necrotic mass
89. This mass usually adenocarcinoma
90. This is the 2nd most common renal neoplasm after wilm's
91. Usually affect male children
92. Usually unilateral from the lower pole
93. Renal pelvis is the most common site of origin
94. Hematuria is the main symptom
95. Hematuria is total,painless,scanty
96. CT is the investigation of choice
97. Operable cases treated by radical nephrectomy
98. Nephrectomy done via extraperitoneal approach to prevent spread
99. Inoperable cases treated by radiotherapy

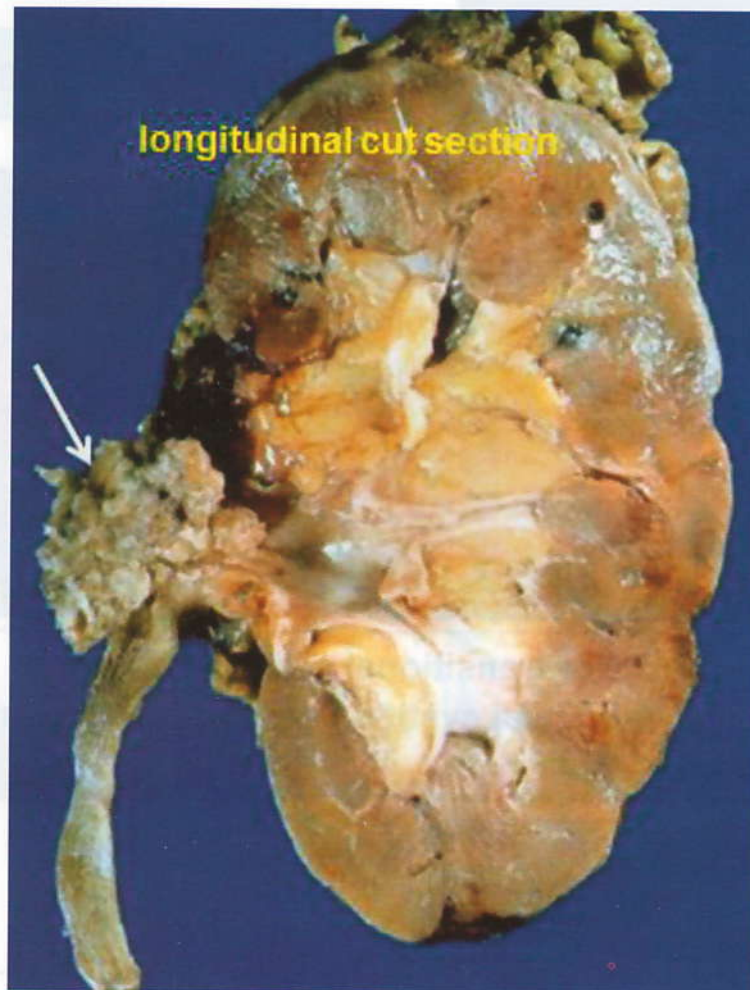
• There is an apparent false capsule surrounding tumour but it actually invades the adjacent tissues
• The tumour infiltrates the renal pelvis and the renal vein



• Pelvis of kidney (arrow) is compressed by the tumour but is also microscopically invaded.
• This is the cause of haematuria
• The kidney is removed with the surrounding fat and lymph nodes in order to achieve a radical resection

• The tumour looks as if it were well-encapsulated but it is actually invasive without a capsule
• It shows areas of hemorrhage
• Modes of spread are direct, lymphatic and by blood
• Commonly to lungs and liver

Transitional Cell Tumour of Pelvis



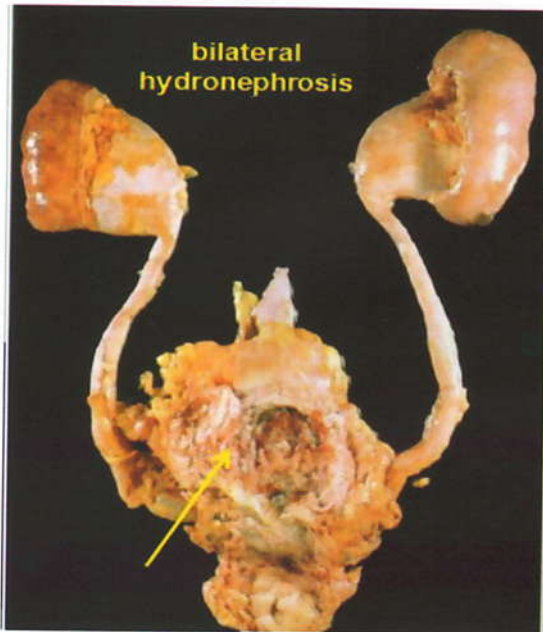
Transitional Cell Tumour of Pelvis

- Villous tumour of renal pelvis (arrow)
- It has variable grades of malignancy
- Commonly multicentric; may simultaneously, or later affect the ureter and the bladder
- Smoking is a predisposing factor

Questions (True or false)

100. This condition may spread through the ureter to the urinary bladder
101. Neglected stag horn can be a predisposing factor
102. There is evidence of invasion of the pelvicalyceal system
103. Has a good prognosis
104. The only line of treatment in early cases is nephron-uretrectomy
105. Can send cannon ball metastasis to the lung
106. The lesion shows a villous papillary growth
107. This lesion is radiosensitive

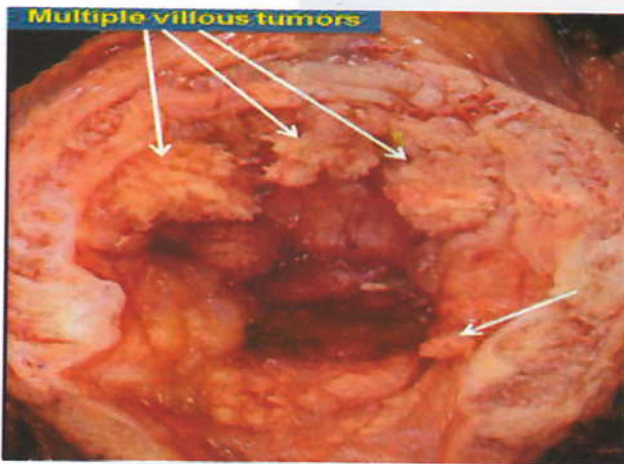
Urinary Bladder Cancer



Urinary Bladder Cancer



- May be squamous or transitional cell carcinoma
- Long-standing Bilharziasis predisposes to squamous type
- Adenocarcinoma is rare

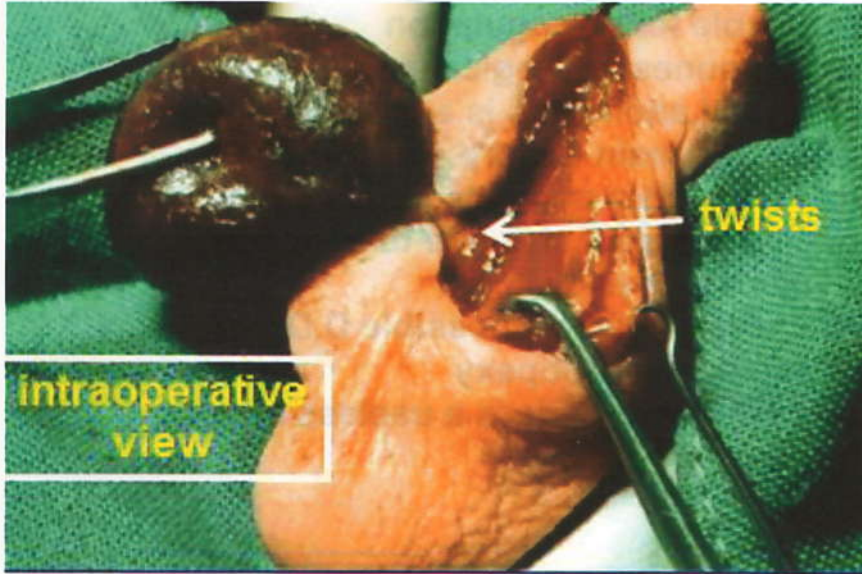


- These are likely to be transitional cell tumour
- they may be multicentric

Questions (True or false)

108. There is a bladder trigonal diverticulum
109. The mass inside shows smooth surface
110. This is a locally malignant bladder mass
111. It is mainly squamous cell carcinoma
112. Mainly affect males
113. Bilharziasis is a predisposing factor
114. Post bilharzial carcinoma spread early by lymphatics
115. Painless terminal haematuria is a cardinal symptoms
116. Repeated attacks of lower U.T.I may be the only symptom
117. Cystourethroscopy and biopsy is the investigation of choice
118. Treatment is mainly radiotherapy

Testicular Torsion



Testicular Torsion

- Actually torsion of spermatic cord
- Predisposing factors include
 - ✓ Undescended testis
 - ✓ Long mesorchium
 - ✓ Capacious tunica vaginalis
- Predisposing factor may be bilateral
- If neglected leads to gangrene, as shown here

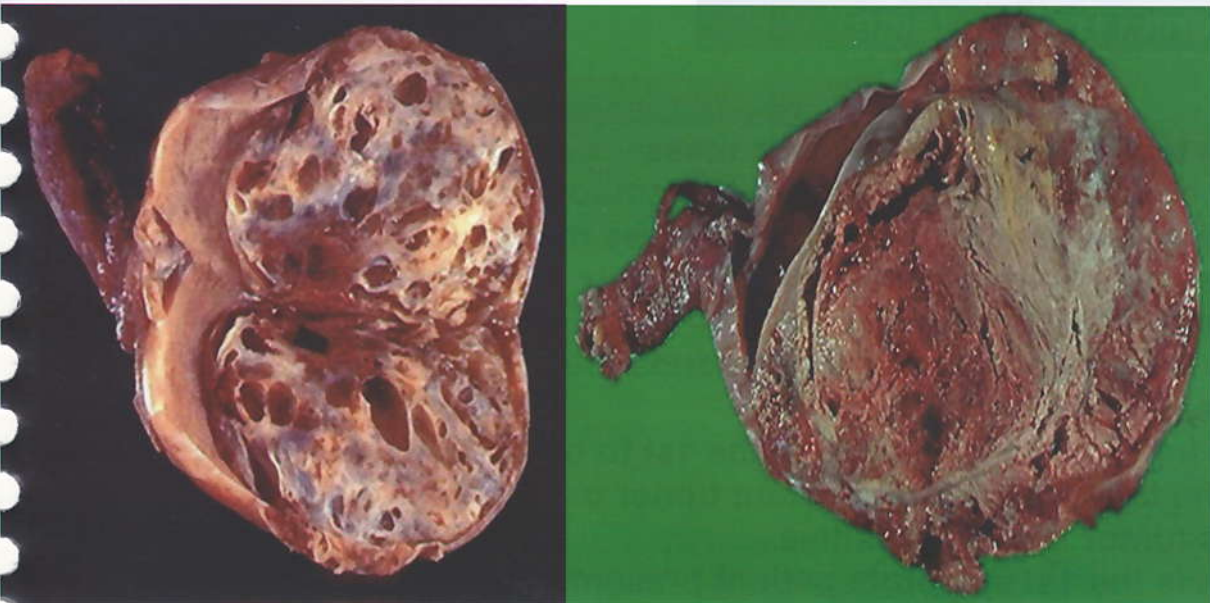
Questions (True or false)

119. This testis is swollen and gangrenous
120. This is the result of delayed management after the 1st hour
121. This is an example for strangulation
122. This is the commonest urological pediatric emergency
123. Hidden congenital anomalies is a predisposing factor
124. Sudden pain is the main feature
125. Neurological shock is a possible complication
126. Usually affect old aged males due to small sized testis
127. Scrotal elevation will relieve pain
128. Acute epididymo-orchitis is a possible D.D
129. This case treated by orchiopexy
130. Orchiopexy of the other side is a useless step

Testicular tumour



- Undescended testis is a predisposing factor
- A seminoma arises from the seminiferous tubules
- Cut section of a seminoma is homogenous, sometimes lobulated
- Spreads by lymphatics to para-aortic lymph nodes in abdomen



- Testicular teratoma arise from totipotent cells
- Variable grades of malignancy
- Heterogeneous cut surface
- Spreads by blood stream, mainly to the lungs



- The scrotum should never be incised for biopsy nor for excision, because this will allow spread to its skin and consequently opens a way of spread to the inguinal lymph nodes
- The testis should be excised with the spermatic cord through an inguinal incision

Questions (True or false)

Regarding to seminoma

131. This testis shows large cystic mass
132. The consistency usually firm with smooth surface
133. Tunica is extensively infiltrated by the mass
134. This mass is heterogeneous and highly malignant
135. Usually affect male child
136. The incidence is less in undescended testis
137. Spread is mainly by lymph
138. The inguinal lymph nodes is the 1st to be affected
139. Alpha feto protein is important tumor marker
140. This tumor is radiosensitive
141. Pain is the 1st symptom patient presented by it
142. Intact testicular sensation decrease its possibility
143. Primary hydrocele is a common complication
144. Us is an important initial investigation
145. Once mass detected by US FNAB is done
146. Ttt is essentially by radical surgical resection
147. Chemotherapy is the 2nd important line after surgery
148. Regarding prognosis It is better than teratoma

Regarding to Teratoma

149. The slide shows a malignant pink smooth mass
150. There are areas of hge and necrosis
151. The tunica can be easily separated from the mass
152. Testicular shape is distorted by the mass
153. The commonest type of this malignancy is dermoid cyst
154. Spread is mainly directed toward the scrotum
155. Alpha feto protein is an important tumor marker
156. Unlike seminoma beta HCG is used as a tumor marker
157. Swelling is usually the 1st presentation
158. Testicular sensation is lost
159. May misdiagnosed as epididymo-orchitis in some cases
160. Diagnose mainly by FNAB
161. Treatment is by simple orchiectomy and post-operative radiotherapy
162. Prognosis is better than seminoma

Urology Key answer

1	True
2	FALSE
3	FALSE
4	True
5	True
6	FALSE
7	FALSE
8	FALSE
9	FALSE
10	True
11	FALSE
12	True
13	FALSE
14	FALSE
15	FALSE
16	True
17	FALSE
18	True
19	FALSE
20	FALSE
21	FALSE
22	FALSE
23	FALSE
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144	True
145	FALSE
146	FALSE
147	FALSE
148	True
149	FALSE
150	True

151	True
152	FALSE
153	FALSE
154	FALSE
155	True
156	FALSE
157	True
158	True
159	True
160	FALSE
161	FALSE
162	FALSE

Important points & tweets based on our questions

- Q1:** Double ureter is more common in females & may present by hydronephrosis or frequent UTI.
- Q11:** Horseshoe kidney is prone to disease because of ureteric obstruction , may result from angulation of ureter as it crosses the isthmus, stasis favor infection & stones .
- Q14:** Horseshoe kidney Ttt only indicated for complicated cases.. isthmus division is rarely needed.
- Q18:** Almost 50% of polycystic kidney disease have associated cysts in liver, but liver function remains normal, cysts of lung, pancreas , 30-40% intracranial aneurysm.
- Q23:** after 30 yrs may develop microscopic or gross haematuria, hypertension, flank pain& UTI.. RFT impaired between 40-50 years...renal failure >50 years.
- Q37:** Renal cysts & neoplasm both appear as space occupying lesions on excretory urography , distinguish by US r CT SCAN .
- Q43:** Most frequent finding in ..(infants→ abdominal mass) (children→ intermittent flank pain following fluid intake).
- Q48:** Pyeloplasty .. to create funnel shaped PUJ of adequate caliber (Anderson –Hynes operation) .
- Q70:** US will detect renal size, thickness of renal cortex& the cause. IVU shows: dilated renal pelvis, PUJ distorted & raised upwards , loss of cupping , clubbing& later ballooning of minor calyces, delayed excretion of contrast.
- Q71:** Nephrectomy done in Hydronephrosis only if (kidney is non functioning with infusion urography / US shows very thin parenchyma / renal scan shows zero function / normal opposite kidney).
- Q75:** In BPH ,there is no correlation between the size of prostate & degree of symptoms , but symptoms severity depend on urethral & bladder neck obstruction by the enlarged gland .

- Q78:** Frequency & urgency are early complaints , at 1st frequency is nocturnal then more progressive . day & night .
- Q82:** Acute urine retention may be 1st presentation in BPH , ppt by excess fluid intake , diuresis , constipation , cold weather & cystitis.
- Q89:** RCC is adenocarcinoma, arises from cells of PCT , lesion shows clear cell pattern & cholesterol crystals.
- Q90:** RCC is the commonest renal neoplasm (75% of all renal tumors) more in males , more to be unilateral , usually above 50-70 years.
- Q95:** Haematuria in 50% of cases .(painless, recurrent, profuse , total) pain in 40% , mass in 30% The classical triad in 10 % of cases .
- Q104:** classic ttt of TCC is nephroureterectomy with excision of adjacent cuff from bladder , if a urethral stump is left .. 50% chance for stump recurrence which is difficult to monitor.
- Q110:** commonest urological malignancy in Egypt , males 4:1 females.
- Q111:** 55% TCC, 40% sq. cell carcinoma on top of long standing Bilhaizal cystitis complicated by 2ry bacterial infection , 5% adenocarcinoma.
- Q115:** Tumor spreads directly infiltrates bladder wall then adjacent organs , seminal vesicles , prostate ... lymphatics only in 15 % .
patient usually presents by recent exaggeration of cystitis symptoms , frequency , burning micturation.. recurrent attacks of painful haematuria.
- Q120:** torsion ,color becomes dark & gangrene occurs within 8-12 hr if not ttt.
- Q127:** Elevation of scrotum doesn't alleviate pain in testicular torsion but decrease pain in acute epididymo-orchitis.
- Q130:** The opposite testis should be fixed at the same time , as the predisposing factor are commonly Bilateral .
- Q135:** Seminoma is the commonest neoplasm of the testis , occurs bet 30-50 years of age.

- Q136:** The incidence of malignancy in undescended testis is 15 times the normal population, & surgery for undescended testis to bring it to scrotum doesn't reduce the high susceptibility to malignancy.
- Q137:** Seminoma is infiltrated with lymphocytes & disseminates mainly by lymphatics & rarely by blood.
- Q138:** Seminoma spread to Para aortic LNs, but inguinal LNs affected if scrotal skin is infiltrated.
- Q139:** AFP may be elevated in non-seminomatous tumors, never in seminoma but Beta-HCG elevated in 100% of choriocarcinoma cases, <10% of seminoma.
- Q141:** Typical cases, 1st symptom is painless enlargement of testis with sense of heaviness, pain present in 30% of cases, sense of heaviness & testicular sensation is lost.
- Q145:** Biopsy & frozen section are done during operation, but never through the scrotum neither by incision nor by needle aspiration to avoid affection of scrotum & dissemination to inguinal LNs.

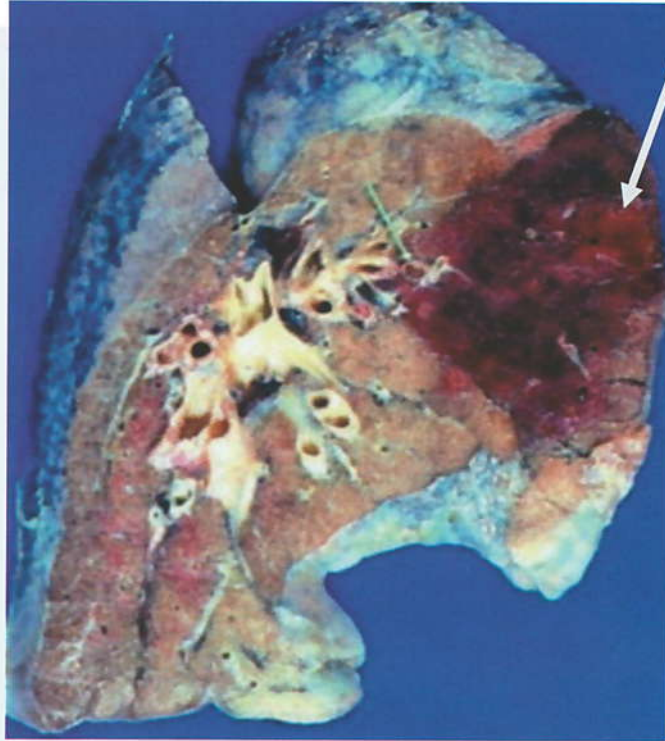
-7-

Chest Jars

Questions (True or False)

1. The underlying cause is DVT
 2. This is a surgical specimen
 3. There is a sub-pleural malignant lesion seen in this cut section
 4. Ventilation perfusion scan help in the diagnosis of this condition
 5. This patient may present with chest pain and hemoptysis
 6. This condition can occur after major pelvic surgery
 7. Myocardial infarction is DD
- (differentiate by ECG)

Pulmonary Embolism



Pulmonary Embolism

- Cut section of a lung with a wedge shaped hemorrhagic infarct.
- The narrow side of the wedge is towards the hilum, while the broad side is to the lung surface
- Infarction is caused by pulmonary embolism that detaches from a deep venous thrombus
- This is a post-mortem specimen as the treatment of this condition is not pneumonectomy but just removal of the embolus (pulmonary embolectomy)

Questions (True or false)

1. The underlying cause is DVT ()
2. This is a surgical specimen ()
3. There is a sub-pleural malignant lesion seen in this cut section ()
4. Ventilation perfusion scan help in the diagnosis of this condition ()
(high V/Q ratio)
5. This patient may present with chest pain and hemoptysis ()
6. This condition can occur after major pelvic surgery ()
7. Myocardial infarction is DD ()
(differentiate by ECG)

Bronchial Carcinoma



- Grey, irregular, poorly-defined mass that arises from a bronchus at the lung hilum
- Most probably bronchial carcinoma (hilar type).
- Biopsy can be done through a bronchoscope
- Smoking is a predisposing factor
- Histological types:
 - ✓ Squamous-cell carcinoma (60%)
 - ✓ Oat-cell carcinoma(30%)
 - ✓ Adenocarcinoma(10%)



- A solid lesion in periphery of the lung
- Most probably bronchial carcinoma (peripheral type).
- However, it may be an adenoma.
- Biopsy is not possible through a bronchoscope, but a percutaneous-CT guided biopsy is advisable in these cases
- This is possibly a surgical specimen because the treatment of operable cases is best by surgical resection

Bronchial Carcinoma

Questions (True or false)

8. A premortem specimen for lung and bronchi ()
9. There is a well-defined rounded yellowish mass ()
10. TB is predisposing factor ()
11. It is a locally malignant bronchial tumor ()
12. It is mainly adenocarcinoma ()
13. Commonly affect old males (10;1) females ()
14. Asymptomatic in 60%of cases ()
15. Cough and hemoptysis are cardinal symptoms ()
16. Patient with unresolving pneumonia suspect it ()
17. Chest x-ray is diagnostic () .. may reveal coin shadow but not diagnostic
18. Operable cases treated by radial pneumonectomy ()

Lung Metastasis



Lung Metastasis

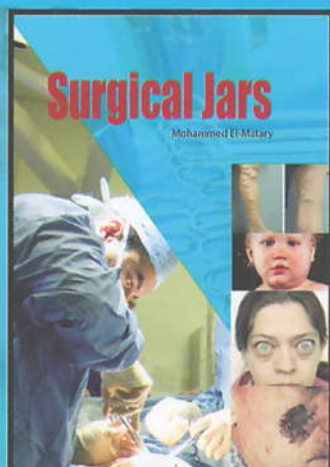
- Longitudinally bisected lung that shows multiple solid nodules, likely multiple metastases
- Common sources are cancers of the breast, kidneys and bones. These are organs whose venous drainage is systemic. GIT and pancreatic cancer metastases are likely to lodge in the liver
- This is a post-mortem specimen as, with metastases, the condition is too advanced to benefit from lung resection

Questions (True or false)

19. This is a surgical specimen ()
20. The commonest source is GIT cancer ()
21. Smoking is a predisposing factor ()
22. Bronchoscopy is the investigation of choice ()
23. This pathological lesion can be associated with a similar condition in the liver ()

Chest Key answer

1	True
2	FALSE
3	FALSE
4	True
5	True
6	True
7	True
8	FALSE
9	FALSE
10	FALSE
11	FALSE
12	FALSE
13	True
14	True
15	True
16	True
17	FALSE
18	FALSE
19	FALSE
20	FALSE
21	FALSE
22	FALSE
23	True



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Dr. Mohammed El-Matary

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